February
1984

The Economic Outlook

A Report to the Senate and House Committees on the Budget —Part I

As Required by Public Law 93-344

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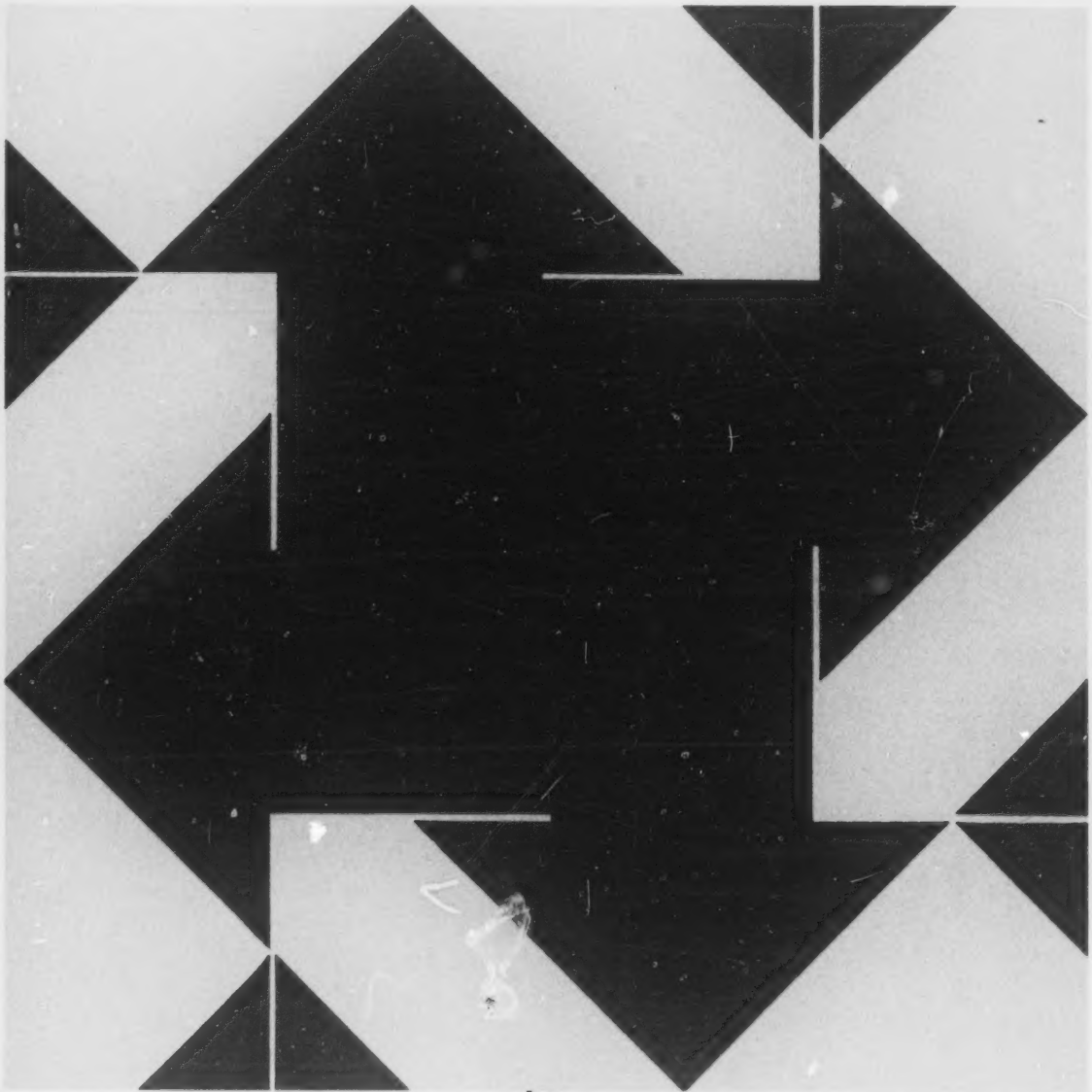

CONGRESS OF THE UNITED STATES

CONGRESSIONAL BUDGET OFFICE

J932-2

THE ECONOMIC OUTLOOK

The Congress of the United States
Congressional Budget Office

J932-2

NOTES

Unless otherwise indicated, all years referred to in this report are calendar years.

Unemployment rates throughout the report are calculated on the basis of the civilian labor force.

Details in the text and tables of this report may not add to totals because of rounding.

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PREFACE

The Congressional Budget Office (CBO) is required by section 202(f) of the Congressional Budget Act of 1974 (Public Law 93-344) to submit an annual report on budgetary options to the House and Senate Committees on the Budget. This year's report is in three parts. This volume, Part I, examines the state of the economy and the economic outlook with budget policies now in place. Part II, Baseline Budget Projections for Fiscal Years 1985-1989, provides a baseline for the consideration of multiyear budget options; the projections show what would happen if current taxing, spending, and lending policies were to continue unchanged for the next five fiscal years. Part III, Reducing the Deficit: Spending and Revenue Options, presents for Congressional consideration a number of broad strategies to reduce projected budget deficits and various specific options for cutting outlays and increasing revenues. In accordance with CBO's mandate to provide objective and impartial analysis, these reports contain no recommendations.

The Economic Outlook was prepared by Lucia Foster, Frank S. Russek, Jr., Debra J. Holt, Emery Simon, George Iden, Christopher Kask, Peter Taylor, Peter A. Woodward, John Sturrock, Robert Dennis, Stephen Zeller, John Hilley, Frederick Ribe, Stephan Thurman, James Barth (visiting economist), and Louis Haskell, under the direction of William J. Beeman.

Robert L. Faherty and Francis S. Pierce edited the manuscript. Debra M. Blagburn, Dorothy J. Kornegay and Mechita O. Crawford typed the many drafts.

Rudolph G. Penner
Director

February 1984

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SUMMARY

The condition of the U.S. economy has improved markedly since the recession. Output grew vigorously during the first year of recovery, close to the average of past recoveries. Employment increased very rapidly, and the decline in the unemployment rate from its postwar high was a near record. At the same time, the dramatically lower inflation rates that were brought about by the deep recession held firm in 1983 despite the pace of the recovery. At the end of 1983, economic growth appeared to be slowing, as is normal during the second year of a recovery.

In one respect, however, the recovery was unusual: interest rates remained at very high levels, apparently because of huge current and prospective federal deficits and the anti-inflationary policies of the Federal Reserve. As a result, some sectors--particularly the export and import-competing industries--did not fully participate in the recovery, and growth in the housing sector has weakened prematurely.

Despite the high interest rates and signs of unbalanced growth, most forecasters, including the Congressional Budget Office (CBO), believe that the near-term outlook remains favorable. The consensus forecast calls for economic growth in the 4 to 5 percent range during 1984, with inflation only slightly above the previous year's rate. But the horizon is clouded by uncertainty concerning federal economic policy. Although Federal Reserve and Administration spokesmen have indicated that their goal is moderate growth with declining inflation, many analysts doubt that the combination of monetary and budgetary policies currently in force will lead to that outcome. Federal deficits are the major source of uncertainty. CBO projects massive federal deficits, rising from $190 billion in the current fiscal year to $326 billion in 1989, if budget policies are not changed. Deficits of this magnitude are unprecedented since World War II and many analysts believe they could have severely depressing effects on interest- and trade-sensitive sectors of the economy and could lead to increased instability in overall economic activity.

RECENT ECONOMIC DEVELOPMENTS

The cyclical upturn in output began in the first quarter of 1983, following a rebound in residential construction and consumer spending and an abrupt decline in inventories in the fall of 1982 (see Summary Table 1).

SUMMARY TABLE 1. RECENT ECONOMIC INDICATORS (Percent change from previous period at seasonally adjusted annual rates, unless otherwise noted)

	1981	1982	1983	1982 Q3	1982 Q4	1983 Q1	1983 Q2	1983 Q3	1983 Q4
Real GNP	2.6	-1.9	3.3	-1.0	-1.3	2.6	9.7	7.6	4.5
Final sales	1.8	-0.7	2.8	-1.5	4.5	0.6	6.8	5.1	3.5
Consumption	2.7	1.4	4.2	0.9	3.6	2.9	10.0	2.2	6.5
Business fixed investment	5.2	-4.7	1.1	-8.8	-6.6	-1.5	7.9	18.7	22.3
Residential investment	-5.2	-15.4	39.6	-13.0	53.2	57.3	79.5	35.9	-5.2
Government purchases	0.8	1.8	0.5	9.4	10.6	-8.8	-1.1	4.4	-2.7
Inventory Change (billions of 1972 dollars)	8.5	-9.4	-2.4	-1.3	-22.7	-15.4	-5.4	3.8	7.5
Net Exports (billions of 1972 dollars)	43.0	28.9	11.7	24.0	23.0	20.5	12.3	11.4	2.5
Industrial Production	2.7	-8.2	6.6	-3.4	-8.4	10.1	18.4	21.8	11.6
Capacity Utilization (percent)	80.2	72.1	75.4	71.7	69.8	71.2	73.9	77.3	79.1
Payroll Employment (millions)	91.2	89.6	90.0	89.3	88.8	88.8	89.5	90.3	91.4
Civilian Unemployment Rate (percent)	7.6	9.7	9.6	10.0	10.6	10.4	10.1	9.4	8.5
Inflation Rate									
CPI-U	10.4	6.1	3.2	7.7	1.9	-0.4	4.3	4.7	4.9
GNP deflator (fixed weight)	9.5	6.4	4.3	5.9	4.7	3.4	4.3	4.7	4.5
Productivity a/	1.9	-0.1	3.1	2.3	1.3	3.7	7.1	2.3	1.0
Interest Rates (percent)									
Treasury bill rate	14.0	10.6	8.6	9.3	7.9	8.1	8.4	9.1	8.8
Corporate AAA bond rate	14.2	13.8	12.0	13.8	11.9	11.8	11.6	12.3	12.4

SOURCES: U.S. Department of Commerce, Bureau of Economic Analysis; U.S. Department of Labor, Bureau of Labor Statistics; Federal Reserve Board; Moody's Investors' Service.

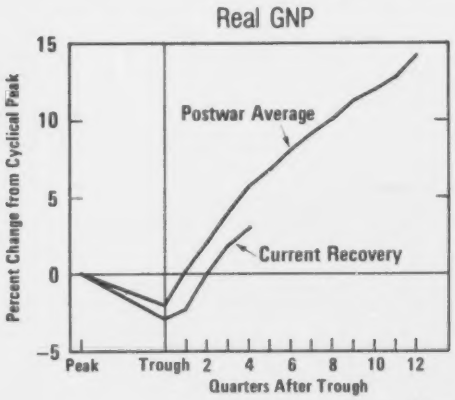
a/ Output per worker hour, nonfarm business sector.

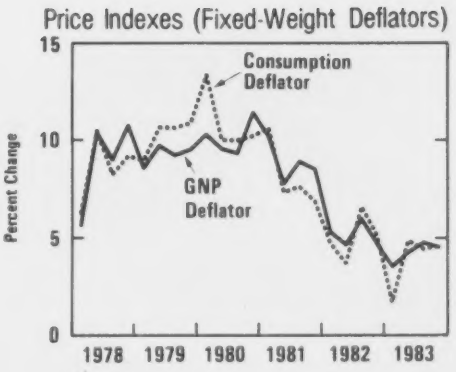
The impetus for this improvement in household demands was the easing of monetary policy beginning in the summer of 1982 and the cuts in income taxes. Defense spending also grew rapidly in 1982. Higher demands caused industrial production to increase sharply during 1983, and by year-end capacity utilization in manufacturing had risen from a post-World War II low of 68.8 percent to 79.4 percent. With the usual lag, business investment spending turned up in the second quarter of 1983 and grew rapidly in the second half of the year in response to rising capacity utilization and to the business tax cuts enacted in 1981 (as amended in 1982).

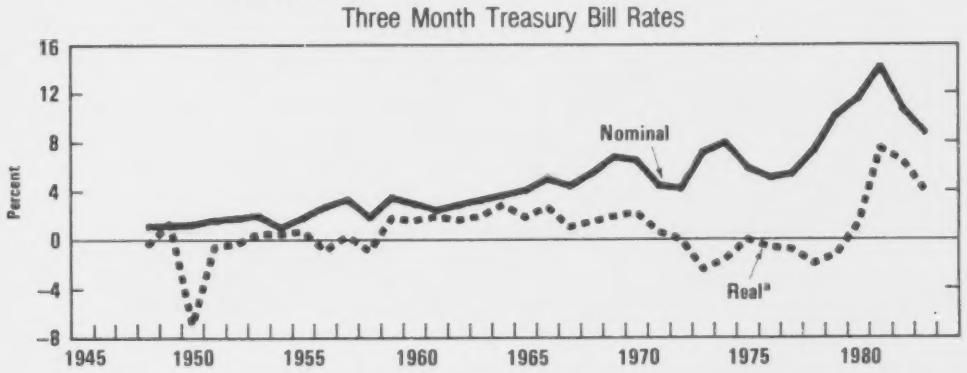
The unemployment rate declined dramatically last year, from 10.7 percent of the civilian labor force to 8.2 percent by year-end. Despite the

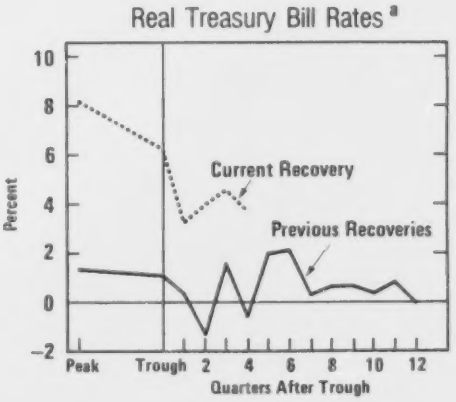
Summary Figure 1.

Recent Economic Developments









SOURCES: U.S. Department of Commerce, Bureau of Economic Analysis; Federal Reserve Board; Congressional Budget Office.

[a] Unless otherwise specified real interest rates in this report are calculated by subtracting from the nominal interest rate the rate of inflation in the succeeding quarter. This value, the "ex post real rate," is a proxy for the unobserved real rate, which is the nominal rate less *expected* inflation over the life of the instrument. The inflation rate used for these two figures is that of the consumption deflator (fixed weight since 1958).

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rapid improvement, the current unemployment rate is within a percentage point of the previous postwar record. The decline was much sharper than warranted by the increase in output, given past experience. In the first year of recovery, the labor force grew less than expected and growth in employment was exceptionally rapid. In consequence, the rebound in productivity was somewhat less than normal.

Inflation continued to decline in 1983, though the rate of decline was not as dramatic as earlier. The increase in the fixed-weight deflator, a broad measure of inflation, fell from a record 9.8 percent in calendar year 1980 to 6.4 percent in 1982 and 4.3 percent in 1983. Some of the improvement undoubtedly reflected temporary factors such as a decline in the price of oil in the spring of 1983, which may not carry over into 1984. Nevertheless, present indications are that inflation will be quite moderate again this year.

High interest rates, the most unusual feature of this recovery (see Summary Figure 1), have not had as large an effect on overall economic growth as many people expected. The increase in gross national product (GNP), adjusted for inflation, was 6.1 percent during 1983, as compared to the 7.4 percent average during the first four quarters of other recoveries since World War II. The high interest rates, however, affected the composition of growth. Net exports have been particularly hard hit. The U.S. merchandise trade balance ran a record $69 billion deficit in 1983, and some forecasters expect it to exceed $100 billion this year. At the same time, capital inflows were very strong because relatively high interest rates in the United States attracted foreign investors. Though the capital inflows benefited domestic investments, foreign demand for dollars to invest in the United States pushed up the international exchange rate of the dollar to record levels. This in turn reduced foreign demand for the products of U. S. exporters, while cheaper imports reduced domestic demand for the products of import-competing industries. Thus, in 1983 net exports were effectively crowded out by tight credit conditions that arose, at least in part, from large budget deficits.

Interest rates also appear to be having an adverse effect on the recovery in construction, which at first was rapid. Between May and August of 1983, interest rates rose significantly, apparently because of strong economic growth and a tightening of monetary policy, and have since remained in a higher range than before. As a result, the growth in housing starts stalled in the fall and residential construction activity declined in the final quarter of 1983. Nonresidential construction is also weak. The outlook for further growth in this sector now depends critically on the future course of interest rates and the resolution of the budget deficit problem.

THE CBO ECONOMIC PROJECTIONS

The CBO baseline economic projections, which are used to generate baseline budget estimates, consist of two parts: (1) a short-run forecast for the 1984-1985 period conditional upon specific policy assumptions; and (2) longer-run projections based upon historical growth trends and the assumption that inflation will gradually decline. 1/

The Short-Run Forecast

The short-run baseline forecast incorporates the following policy assumptions:

- The federal budget policies are those currently in place. Defense authority, in real terms, increases at roughly a 5 percent rate. Budget outlays are $853 billion in fiscal year 1984 and $928 billion in fiscal year 1985.

- Growth in the M1 money aggregate is assumed to be 6.0 percent over the four quarters of 1984 and 5.5 percent during 1985.

The forecast also assumes that there will be no price shocks or credit crises. Retail food prices are assumed to increase at about 4 percent in 1984 and 5 percent in 1985--reflecting the delayed effects of last summer's drought. Crude oil prices are assumed to remain flat, at about $29 per barrel, throughout the forecast period.

With these assumptions, real GNP is projected to rise 4.7 percent over the four quarters of 1984 and 3.7 percent during 1985 (see Summary Table 2). Average growth over the two years is slightly above the average for the second and third years of previous postwar recoveries. The civilian unemployment rate is projected to decline from 8.5 percent in the last quarter of 1983 to 7.6 percent by the end of 1984 and to 7.1 percent by late 1985. As measured by the GNP deflator, inflation is expected to accelerate slightly from 4.2 percent in 1983 to 5.3 percent over the four quarters of 1984 and 5.1 percent in 1985. This increase in inflation reflects temporary factors--for example, the decline in oil prices last year that is not expected to be repeated this year, and a temporary acceleration in food prices later in 1984 stemming from last year's drought. In addition, the relatively rapid

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1/ Because of uncertainty in the economic outlook, CBO has also prepared high- and low-growth paths that are used to construct alternative budget estimates. These are described in Chapter I.

SUMMARY TABLE 2. THE CBO FORECAST FOR 1984 AND 1985

Economic Variable a/	Actual 1982	Actual 1983	Forecast 1984	Forecast 1985
Fourth Quarter to Fourth Quarter (percent change)				
Nominal GNP	2.6	10.4	10.3	9.0
Real GNP	-1.7	6.1	4.7	3.7
GNP Implicit Price Deflator	4.4	4.1	5.3	5.1
Consumer Price Index for Urban Consumers	4.5	3.3	5.1	4.9
Calendar Year Average (percent)				
Civilian Unemployment Rate	9.7	9.6	7.8	7.3
3-Month Treasury Bill Rate	10.6	8.6	8.9	8.6

a/ For further detail see Chapter I.

reduction of slack in the economy will tend to keep inflation from falling significantly. However, nothing in this forecast is inconsistent with the hypothesis that inflation is on a long-term downward trend.

The three-month Treasury bill rate is projected to average 8.9 percent this calendar year and slightly lower next year. Interest rates remain very high in real terms because of the exceptionally large amount of Treasury borrowing combined with strengthened private credit demands.

The Longer-Run Economic Projections

The baseline economic projections for the 1986-1989 period assume moderate noncyclical growth in output averaging about 3.4 percent per year (see Summary Table 3). Unemployment declines gradually to 6.5 percent by the last year of the projection. Most economists believe that a significantly lower rate of unemployment would cause inflation to accelerate. Inflation declines very gradually from 5.1 percent in calendar year 1985 to 4.3 percent in 1989, and interest rates decline with inflation. Growth in nominal GNP also decelerates during the projection period.

Although these longer-run projections for inflation and nominal GNP growth do not reflect specified goals for the economy, they appear to be broadly consistent with statements by both the Administration and monetary authorities. 2/ The longer-term projection of real growth is based upon historical trends and is not intended to be an implicit judgment about what would be appropriate growth. For the seven-year period beginning with the recession trough (1982:4 to 1989:4) growth in real GNP averages 4 percent in the CBO baseline projection, precisely the same as the average growth rate during the first seven years following previous postwar recessions. Since the CBO longer-run projections are based on historical trends, they are not necessarily consistent with budget policies now in place.

Uncertainty in the Outlook

There is a great deal of uncertainty in the economic outlook and considerable divergence of views among forecasters, particularly with respect to inflation and interest rates.

- Inflation is subject to unforeseeable events--a bad crop year, a cut in oil supplies, or a sharp change in the value of the dollar in international exchange markets. Some analysts claim the dollar is "overvalued" by 20 percent or more; a decline in the dollar by that amount would raise the cost of imported goods and raise domestic prices by, perhaps, 2 percent. Inflation is also affected to an uncertain degree by the relative effects of economic slack and rapid growth.

2/ Economic Report of the President (February 1983), p. 23, and Paul A. Volcker, "We Can Survive Prosperity," an address to the American Economic Association, December 18, 1983.

SUMMARY TABLE 3. LONG-RUN ECONOMIC PROJECTIONS, CALENDAR YEARS 1984-1989

Economic Variable	1983 Actual	1984	1985	1986	1987	1988	1989
GNP (billions of current dollars)	3,310	3,651	3,995	4,339	4,704	5,084	5,481
Nominal GNP Growth Rate (percent change, year over year)	7.7	10.3	9.4	8.6	8.4	8.1	7.8
Real GNP (percent change, year over year)	3.3	5.4	4.1	3.5	3.5	3.4	3.3
GNP Implicit Price Deflator (percent change, year over year)	4.2	4.7	5.1	4.9	4.7	4.5	4.3
Consumer Price Index, CPI-U (percent change, year over year)	3.2	4.8	5.1	4.9	4.7	4.5	4.3
Civilian Unemployment Rate (percent, annual average)	9.6	7.8	7.3	7.0	6.8	6.6	6.5
3-Month Treasury Bill Rate (percent, annual average)	8.6	8.9	8.6	8.4	8.2	8.0	7.8

NOTE: For further details, including fiscal year figures, see Chapter I.

- Interest rates are very difficult to forecast accurately. In addition to economic policy, the interest rate outlook depends on: the course of expected inflation, the response of savings to recent tax law changes, foreign capital inflows, and the risk of credit market disruptions, perhaps resulting from payment problems in developing countries.

The major source of uncertainty lies in economic policy. Some analysts believe that monetary policy has been too tight since last summer, and fear that there will be a slowdown in economic growth during the first half of this year despite the fiscal stimulus. Others are concerned that the Federal Reserve will find it difficult to maintain moderate money growth in the face of large federal deficits and the developing-country debt crisis.

In regard to fiscal policy, it is almost universally agreed that action must be taken to reduce future deficits significantly. But it is not clear how or when the problem will be resolved. Businessmen and individuals cannot

make effective decisions about the future without knowing what deficit-reducing measures will be taken and the impact these measures are likely to have on their activities. Moreover, if the policy changes are delayed until 1985, as many expect, they are not likely to affect revenues and outlays significantly until 1986 or later, increasing economic uncertainty. Continuing deficits may spur business investment and consumer buying, but they will also mean greater competition for credit by private and government borrowers. As shown in Summary Figure 2, private credit demands normally rise rapidly after a recession while federal borrowing normally declines. But in this recovery, the competition between private and federal credit demands will be more intense, if policies are not changed. Federal borrowing will decline relative to GNP only in the first years of the projection--and then only slightly--and will remain exceptionally high and increase relative to GNP in the later years.

If action on the deficit is postponed, it is also possible that foreigners will lose confidence in U.S. policies and reduce their investments in this country. While the resulting decline in the exchange value of the dollar would benefit U.S. export and import-competing industries, it would also generate increased domestic inflation and--given a fixed rate of money growth--push up interest rates; the reduction in capital inflows would add even more pressure on interest rates, unless offset by a deficit reduction.

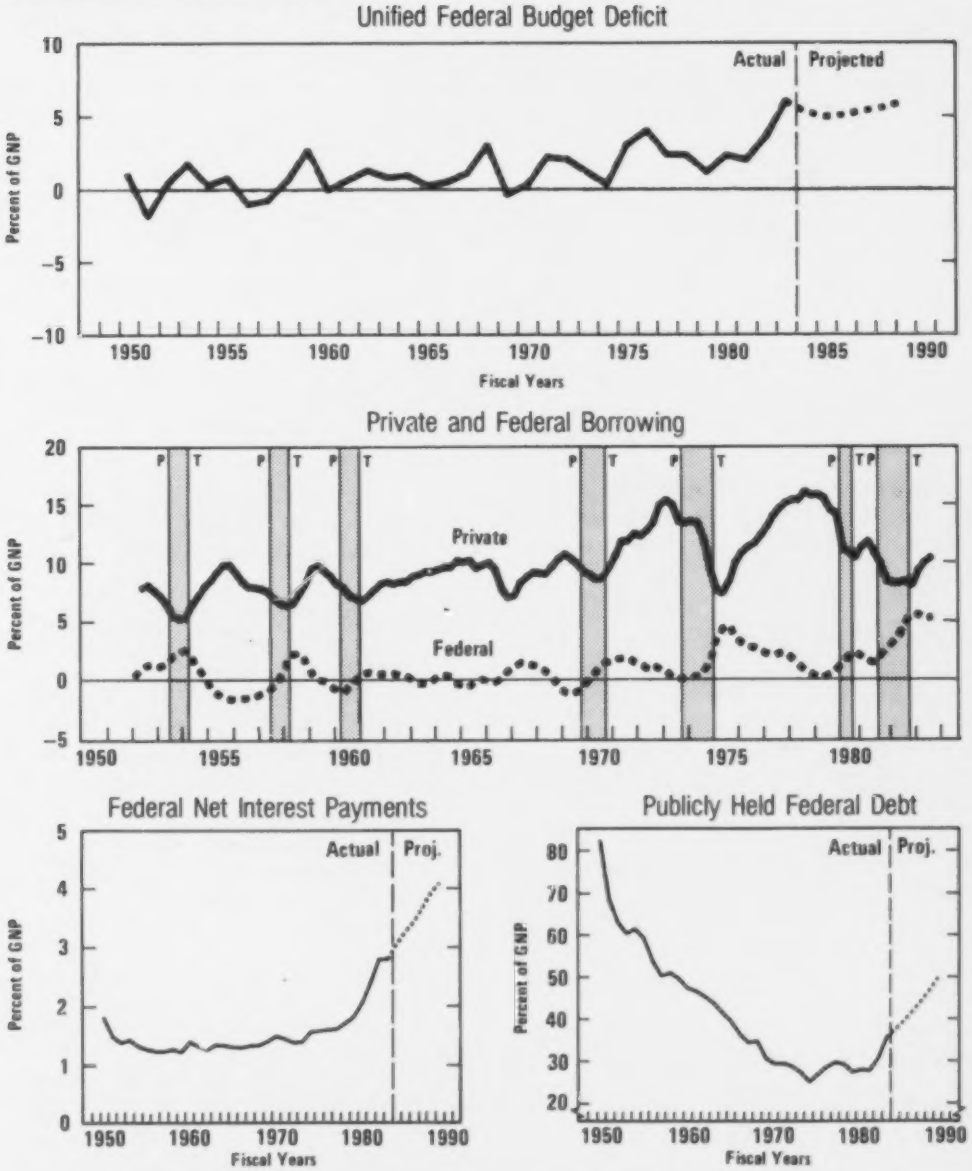
THE BUDGET OUTLOOK

Given baseline economic assumptions and no change in the budget policies now in place, CBO estimates that the federal deficit will rise from about $190 billion this year to $326 billion in fiscal year 1989 (see Summary Table 4). Despite rapid growth in GNP, the budget deficit rises from 5.3 percent of GNP in fiscal year 1984 to 6.1 percent in 1989, matching the record level established last year. Federal spending remains very strong in the baseline projection: relative to GNP, it declines from 24.7 percent in fiscal year 1983 (a postwar record) to 23.9 percent this year, but then rises to a new record high by 1989. 4/ Revenues are projected to be 18.6 percent of GNP in fiscal year 1984, rising gradually to 19.0 percent in 1988.

4/ Congressional Budget Office, Baseline Budget Projections for Fiscal Years 1985-1989 (February 1984). The CBO baseline budget concept assumes that all spending programs are adjusted for inflation.

Summary Figure 2.

Government Borrowing



SOURCES: Office of Management and Budget; U.S. Department of Commerce, Bureau of Economic analysis; Congressional Budget Office.

NOTE: P and T lines indicate business cycle peak and trough dates.

SUMMARY TABLE 4. THE BUDGET OUTLOOK UNDER CURRENT POLICIES (By fiscal year, unified budget basis)

	1983	1984	1985	1986	1987	1988	1989
			Billions of Dollars				
Budget Deficit	195	190	195	217	248	282	326
Revenues	601	663	733	795	863	945	1016
Outlays	796	853	928	1012	1112	1227	1342
Off-Budget Deficit	12	13	13	13	14	13	13
Total Deficit	208	203	208	230	262	295	339
			Percent of GNP				
Budget Deficit	6.1	5.3	5.0	5.1	5.4	5.6	6.1
Revenues	18.6	18.6	18.7	18.7	18.7	19.0	18.9
Outlays	24.7	23.9	23.7	23.8	24.1	24.6	24.9

While about half of the deficit in 1983 was accounted for by recession, most of the deficits in future years are the result of budget policies. This is illustrated by the fact that the baseline budget deficit rises as the expansion proceeds and slack diminishes. At the end of the projection, when the economy is assumed to be operating at a high level of capacity utilization and the unemployment rate is down to 6½ percent, the deficit-to-GNP ratio matches the recession-induced record of 1983.

Sensitivity of Budget Estimates to Economic Assumptions

Budget projections are conditioned upon economic assumptions, and the actual performance of the economy will affect realized spending and revenues. Interest-rate assumptions are particularly important in the outyear budget estimates. 5/ Nevertheless, CBO's analysis shows that it is

5/ For a detailed discussion of the sensitivity of the budget to economic conditions, see CBO, Baseline Budget Projection for Fiscal Years 1985-1989.

unlikely that a more vigorous economic expansion than shown in CBO's baseline will cure the deficit problem. Even if economic growth matches the strong expansion of the 1960s, which appears unlikely, federal deficits will probably remain at near-record levels unless policies are changed. 6/ Moreover, the sheer magnitude of the projected budget deficits means that errors in forecasting them are likely to be proportionately smaller than in the past. 7/ It is noteworthy that CBO's projection of the deficit for fiscal year 1988 has changed very little from that of a year ago. 8/

CONSEQUENCES OF LARGE DEFICITS

Federal deficits of the magnitude shown in the baseline projection would have major consequences both for the economy and for future budgetary choices.

Deficits, Interest Rates, and the Composition of Output

Most economists agree that federal deficits of the size projected by CBO would push up interest rates. The effect would be particularly strong as the economy approached full employment (or the limits to growth set by monetary policy), where public and private borrowing would compete for a relatively fixed level of saving. Even in the present situation of less than full employment, deficits raise interest rates. This is because they increase economic activity and the demand for money. If the money supply does not change, increased money demand results in higher interest rates.

6/ See CBO's high-growth path and associated budget estimates in Chapter I.

7/ Forecasts of deficits have shown large errors in the past because the deficits were a residual of two much larger numbers. Thus in the 1960s when deficits averaged 4.6 percent of total outlays, a 5 percent error in the forecast of spending would have resulted in a 109 percent error in the projected deficit. But in 1983, when the deficit was 24.6 percent of outlays, a 5 percent error in the outlay estimate would have resulted in an error of only 20 percent in the deficit estimate, other things being equal.

8/ CBO currently projects a fiscal year 1988 baseline budget deficit of $282 billion, up from the $267 billion in CBO's February 1983 baseline budget projection for fiscal year 1988.

The projected situation has no precedent, and therefore one should not expect to find in historical data a simple association between deficits and interest rates. Previous deficits experienced during peacetime have been much smaller than those now projected, and their impact on interest rates has often been overwhelmed by other factors:

- Budget deficits are usually largest during recessions when private credit demands are weakest, causing rates to fall.
- The effects of federal deficits on interest rates have sometimes been fully or partially offset by monetary policy, particularly when the Federal Reserve was targeting interest rates.
- Capital inflows from abroad have often had significant effects on interest rates.

However, the current and prospective deficits are so large that their effects on interest rates seem obvious, even though very large capital inflows from abroad have so far limited the rise in rates. It should be emphasized that these capital inflows are not costless, since they have forced up the dollar to record levels. The high dollar has in turn had a devastating effect on the trade balance because it has reduced the competitiveness of export industries and those industries that compete with imports. If the capital inflow continued for a long time, foreign claims on U.S. output could rise to such a level that it would reduce our standard of living below what it would be if we decreased government borrowing and relied less on capital inflows.

High interest rates, if they persist, are also likely to affect capital accumulation. Calculations made by CBO indicate that interest-rate increases have raised the cost of some capital goods dramatically in recent years. This is especially so for business investments in structures, where higher interest costs have greatly exceeded the benefits of the recent tax cuts. Although the cyclical rise in demands and the higher capacity utilization rate are now providing a strong stimulus to investment, this may in the long run be largely offset by high interest rates. Over time a reduction in the capital-output ratio will retard growth in productivity, the major source of rising living standards.

The Interest Payments Bill

The most striking feature of the CBO budget projections is the extremely rapid growth in outlays for interest costs on the debt (see Summary Figure 2). Net interest costs, which were between 1 and 2 percent of GNP for decades, are projected to rise from $90 billion in fiscal

year 1983 (2.8 percent of GNP) to more than $218 billion in fiscal year 1989 (4.1 percent of GNP). If the interest bill were held at 2.8 percent of GNP, the cumulative reduction in interest outlays through 1989 would be $214 billion. It would require very large spending cuts or tax increases to offset the projected rise in interest costs.

Outlays for interest payments are very sensitive to interest-rate changes; with high interest rates (relative to GNP growth), the growth in the interest bill could become explosive, leading to an ever-growing debt-to-GNP ratio. The experience of some other countries is that, when interest costs become so burdensome that a budgetary solution is not politically feasible, the central bank may be induced to purchase or "monetize" the debt, thereby causing rapid growth in the money supply and hyperinflation.

CONCLUSION

Most forecasters believe that the economic outlook for the year ahead is bright. But the longer-run prospects for the economy are doubtful, unless decisive action is taken to reduce growing federal budget deficits. Without a change in budget policies, the cost of financing the deficits could become a severe burden, to the point that huge spending cuts or tax increases might be necessary just to prevent an explosive increase in outlays for interest payments. Such large deficits would also increase real interest rates and eventually lead to reduced capital formation and lower living standards. The longer the decision on the deficit is postponed, the greater the risk of another credit crunch and increased economic instability.

CHAPTER I. THE ECONOMIC OUTLOOK

The near-term economic outlook is favorable. The Congressional Budget Office (CBO) forecasts a continuation of the upswing, although at a slower pace than experienced in the past year. The forecast shows a small increase in inflation in 1984-1985. Interest rates will be flat or slightly below recent levels. The outlook for inflation and interest rates is, however, the least certain part of the forecast.

This chapter presents CBO's short-run economic forecast for 1984-1985 and longer-run baseline economic projections for 1986-1989, as well as two alternative projections. The alternative projections attempt to bracket the reasonable range of uncertainty surrounding the budget projections.

THE ECONOMIC FORECAST, 1984-1985

CBO's forecast is based on the following assumptions:

- Budget policies are those in place at the end of the first session of the 98th Congress in December 1983. Budget outlays are assumed to be $853 billion in fiscal year 1984, and $928 billion in 1985. Defense authority is assumed to grow at a 5 percent rate after adjusting for inflation. The revenue projections, $663 billion in fiscal year 1984 and $733 billion in 1985, are revenues generated under existing law.

- Although the Federal Reserve has not yet set money targets for 1984 and 1985, the money aggregate M1 is assumed to grow at 6.0 percent in the four quarters of 1984--the midpoint of the tentative range that was specified in its report to Congress last July--and to decelerate by one-half percentage point in 1985. M2 grows at 8 percent during 1984. 1/

1/ The Federal Reserve's tentative growth ranges for 1984 were 6½ to 9½ percent for M2 (fourth quarter to fourth quarter), 6 to 9 percent for M3, and a "monitoring range" of 4 to 8 percent for M1. See Board of Governors of the Federal Reserve System, Mid-Year Monetary Policy Report to Congress Pursuant to the Full Employment and Balanced Growth Act of 1978, July 20, 1983.

TABLE I-1. THE CBO FORECAST FOR 1984 AND 1985

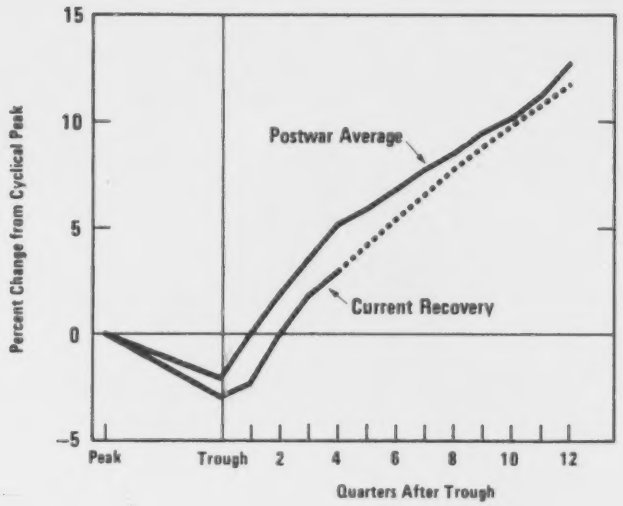
Economic Variable	Actual 1982	Actual 1983	Forecast 1984	Forecast 1985
Fourth Quarter to Fourth Quarter (percent change)				
Nominal GNP	2.6	10.4	8.3 to 12.3	6.0 to 12.0
Real GNP	-1.7	6.1	3.7 to 5.7	2.2 to 5.2
GNP Implicit Price Deflator	4.4	4.1	4.3 to 6.3	3.6 to 6.6
Consumer Price Index				
Urban consumers	4.5	3.3	4.1 to 6.1	3.4 to 6.4
Urban wage and clerical workers	4.4	2.9	3.9 to 5.9	3.4 to 6.4
Calendar Year Average (percent)				
Civilian Unemployment Rate	9.7	9.6	7.5 to 8.1	6.7 to 7.9
3-Month Treasury Bill Rate	10.6	8.6	7.9 to 9.9	5.6 to 11.6
Corporate Bond Rate (Moody's AAA)	13.8	12.0	11.2 to 13.2	9.6 to 13.6

- Food prices (at the grocery) are assumed to increase about 4 percent in 1984 (year over year) and 5 percent in 1985.
- The price of crude oil is expected to be flat, at about $29 per barrel through 1985.

Given these assumptions, the CBO forecast shows continued growth in real output--albeit at a slower pace than last year (see Table I-1). During the first four quarters of the recovery, which began in the fourth quarter of 1982, output increased by 6.1 percent. In 1984 real growth slows to 4.7

Figure I-1.

Real GNP in Recession and Recovery



SOURCES:
U.S. Department of Commerce, Bureau of Economic Analysis; Congressional Budget Office.

percent, and in 1985 to 3.7 percent (measured fourth quarter to fourth quarter). The civilian unemployment rate declines from 8.5 percent in the last quarter of 1983 to 7.6 percent by the end of 1984 and to 7.1 percent by late 1985. Prices, as measured by the GNP deflator, are forecast to rise by 5.3 percent this year (fourth quarter to fourth quarter) and 5.1 percent next year. Treasury bill rates are expected to average 8.9 percent for calendar year 1984 and slightly lower next year (8.6 percent).

The pattern of growth seen for 1983-1985 is typical of periods of economic recovery although the recession preceding it was deeper than average (see Figure I-1). 2/ In 1983 growth was very rapid as housing responded to lower interest rates and inventories stopped falling and began rising. Strong demands for some consumer durable goods, such as automobiles, appliances, and home furnishings, gave rise to rapid growth in consumer spending in the first half of 1983. In 1984 the composition of growth becomes more uniform among different sectors:

2/ In other postwar recoveries, economic growth averaged 7.4 percent the first year, 3.2 percent the second year, and 3.9 percent the third year. In the current recovery, growth was less than average in the first year but is projected to be somewhat above average in the second year.

- The contribution to growth from inventory accumulation and housing is expected to diminish. Housing, which initially responded to the reduction in interest rates, should level off because interest rates remain at very high levels.

- Growth in consumer spending is also expected to slow to a more sustainable pace, although it should be buoyed by substantial gains in employment and personal income.

- Net exports, which fell very sharply in 1983, are not expected to fall as rapidly in 1984 and 1985--thus becoming a smaller negative factor for the growth in GNP.

- Business fixed investment, which turned up strongly in the second half of 1983, is expected to make major contributions to growth in 1984 and 1985.

The conditions are in place for rapid growth in investment. Capacity utilization has risen strongly from a low base at the bottom of the recession. Corporate profits are expected to continue their rapid increase in response to wider profit margins and growing sales. In the CBO forecast, economic profits increase approximately 19 percent in 1984 and another 15 percent in 1985 (year over year). In addition, business capital spending is expected to be up strongly this year. The most recent Commerce Department survey of business investment plans, taken in November/December, found that nonfarm businesses intend to increase their capital spending by 9.9 percent in 1984 (in nominal terms). A negative factor in the investment outlook is high interest rates, but they will in part be offset by the investment tax incentives instituted in 1981 (as amended in 1982).

Uncertainties in the Forecast

There is a great deal of uncertainty in the short-run forecast. In part, this stems from the problems of fiscal and monetary policy. The current stance of fiscal policy is unprecedented, and therefore its effects are highly uncertain. Moreover, it is not clear when or how the long-run deficit problem will be resolved, and this raises risks for investors. With respect to monetary policy, the financial markets appear to be apprehensive over the course being taken by the Federal Reserve. Some analysts fear that the slow growth in the money aggregate M1, coupled with high real interest rates during the second half of last year, has increased the risk of another economic downturn. Others fear an excessively expansive monetary policy in the coming election year. CBO's forecast assumes that the money aggregates grow during 1984 in the middle of the preliminary target ranges announced in July 1983, and decelerate slightly in 1985. But international

factors, such as the large debts of some developing countries, or sudden changes in exchange rates, could significantly affect both the U.S. economy and monetary policy.

In terms of economic variables, the major short-run uncertainties seem to be in the areas of unemployment, inflation, and interest rates.

Unemployment. The decline in the unemployment rate was greater than expected in 1983. Employment growth was unusually rapid in relation to output, and the labor force grew less than expected. If these developments prove to be temporary, or reflect measurement errors, unemployment could remain fairly flat for several quarters. If the trends continue, however, unemployment could be lower than forecast. CBO's forecast assumes a return to more normal patterns for labor force participation and productivity growth.

Inflation. Most forecasters expect an acceleration of inflation in 1984. CBO's forecast shows a mild acceleration this year, partly because several factors that held inflation down in 1983 are not expected to continue--such as the depressed prices for food and energy, and the give-backs in wages that unions granted to some industries and businesses. Food prices may rise fairly rapidly toward the second half of this year because of the delayed impact of last summer's drought. Moreover, the Social Security tax rate increase that took effect in January has raised labor costs slightly.

Much of the forecast's uncertainty about inflation stems from three sources. First, no one is quite sure how to weigh the downward pressure exerted by the still high level of slack in the economy against the upward pressure resulting from expansion. Second, forecasters are uncertain about the dollar exchange rate. CBO assumes a very gradual decline in the trade-weighted value of the dollar; but the decline could be much sharper, causing inflation to be significantly higher, or on the other hand a decline might be postponed. Third, monetary policy could turn out to be either more expansionary or more restrictive than assumed in the forecast. 3/ In addition, some economists (particularly monetarists) believe that the relatively rapid rate of growth in money aggregates from mid-1982 to mid-1983 will cause inflation to accelerate substantially this year. (According to the monetarists' models, the sharp downturn in money growth after mid-1983 should cause real growth to slow very sharply, or turn negative during some quarters of 1984.)

3/ These uncertainties about the inflation forecast are discussed in more detail later in this report--the effect of economic slack and monetary policy in Chapter II, and the international situation in Chapter IV.

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Interest Rates. The third principal area of uncertainty is interest rates. In this recovery, both nominal and real rates have been extraordinarily high. (They even rose somewhat further last summer in response to the stronger economy and some tightening by the Federal Reserve.) This forecast sees a higher path of interest rates than did CBO's August 1983 forecast; the earlier forecast assumed that the Congress would pass the deficit-reduction measures called for by the first budget resolution for fiscal year 1984. The current forecast shows interest rates remaining about where they are now, partly because of the high federal deficits. However, several factors suggest that pressures on interest rates may not intensify: economic growth seems to be slowing, and business cash flow may be strong enough to mitigate growth in private credit demands. The budget deficit, while very high, is expected to decline as a percent of GNP during the first three years of the recovery. In addition, the net savings generated by state and local governments and by foreigners should help to contain further upward pressures on interest rates. Finally, if inflation remains stable, long-term interest rates could start to fall along with inflationary expectations. On the other hand, some forecasters believe that interest rates will go even higher after mid-1984, primarily because they expect the projected large federal deficits to collide with rising private credit demands. In addition, they point out that short-term rates typically rise during economic expansions. In sum, the current situation in credit markets is unprecedented, and it is very difficult to weigh these various and contrasting influences. In any case, the course of monetary policy is especially critical for the near-term outlook for interest rates. 4/

Another important element of uncertainty lies in the international situation. A substantial part of the current budget deficit has been directly or indirectly financed by capital inflows from abroad. This has been an important moderating factor on interest rates in this country. For now, foreigners seem willing to continue acquiring U.S. government and private financial claims on a large scale. However, the sustainability of these inflows at interest rates near recent levels is not assured, and a substantial reduction in foreign financing would put upward pressure on domestic interest rates. Not only would this intensify crowding-out pressures on interest-sensitive sectors of the economy; it would also exacerbate the debt problems of developing countries. These and related international issues are discussed in Chapter IV.

4/ Monetary and fiscal policy issues are discussed in more detail in Chapters II and III.

THE LONGER-RUN ECONOMIC PROJECTIONS

In addition to its forecast for 1984-1985, CBO has made projections for the outyears, 1986-1989. These assume moderate noncyclical real GNP growth based on historical averages. 5/ Such a growth pattern would lower the unemployment rate to a level of about 6½ percent in 1989--a level thought by many economists to be in the lowest range that could be attained without additional inflation. This rate of growth is not a forecast but merely based on trend growth, representing average postwar economic performance over a seven-year horizon. Thus, it provides a useful benchmark for evaluating budget policy.

The projections show some gradual decrease in inflation and nominal GNP growth, in contrast to the projections of many private forecasters. 6/ In this they are broadly consistent with statements by both the Administration and the monetary authorities calling for moderate growth and gradually declining inflation. For example, the President's Council of Economic Advisers has stated that "the fundamental guiding principle of

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5/ As shown below, the average growth rate for seven-year periods following the trough quarter of six previous postwar recessions was 4.0 percent--the same as for the seven years of the projection. However, there is a substantial variation in the averages for different periods, ranging from 5 percent for the recovery beginning in 1961 to about 3 percent for the 1954 and 1975 recoveries.

Trough Quarter of Recession	Average Annual Real GNP Growth During Seven Years Following Trough (percent)
1949:4	4.7
1954:2	3.0
1958:2	4.6
1961:1	5.0
1970:4	3.6
1975:1	3.0
Average recovery	4.0

6/ Many private forecasters foresee a gradual increase in inflation and no decline in nominal GNP growth in the outyears. Such forecasts are typically based on an assumed monetary policy that does not result in continued reduction in the growth of money aggregates.

monetary policy in an inflationary economy should be a gradual reduction in the rate of growth of the money stock until the rate is consistent with price stability." 7/ More recently, Chairman Paul Volcker of the Federal Reserve Board has emphasized the importance of achieving "reasonable price stability," and observed that this implies that "growth in nominal GNP and money and credit will need to be reduced over time." 8/

Those favoring a gradual reduction in the growth of nominal GNP believe that a national commitment to such a goal would squeeze inflationary expectations out of the economy. The rate of reduction implied by the CBO projections is not intended to be normative, but is broadly consistent with historical experience as to the relationships between real economic growth, inflation, and unemployment--given that no price shocks are assumed to occur. 9/

In addition, the CBO projections in the outyears may not be consistent with baseline budget policies or with the recent combination of monetary/fiscal policy. Indeed, many analysts would question whether these economic projections would be realized with the current mix of budget and monetary policies.

The economic projections are based on the following assumptions for the outyears: No inflationary shocks occur, such as a major interruption in oil supplies or a major crop failure. Food prices grow at approximately the same rate as prices in general. Crude oil prices remain flat through 1986 and then rise at about the same rate as prices in general. The growth in the labor force averages about 1½ percent per year, which is considerably slower than the 2½ percent rate of growth during the 1970s. Productivity, or output per unit of labor, trends upward by about 1-3/4 percent annually.

The economic projections, shown in Tables I-2 and I-3 and in Figure I-2, can be summarized as follows:

7/ Economic Report of the President (February 1983), p. 23.

8/ Paul A. Volcker, "We Can Survive Prosperity," Remarks at the Joint Meeting of the American Economic Association-American Finance Association, San Francisco, California, December 28, 1983.

9/ Some analysts would argue that the projections take a somewhat optimistic view of the short-run trade-off between inflation and unemployment, which is very unstable and therefore an uncertain basis for projections. The projections imply that smooth growth of the sort portrayed is consistent with some decline in inflationary expectations.

- Nominal GNP growth declines slowly after 1984.

- Economic expansion continues, with real growth averaging about 3-3/4 percent annually from 1983 to 1989, and 3½ percent annually from 1985 to 1989. (Growth averages 4.0 percent annually from the fourth quarter of 1982, the trough of the recession, to the fourth quarter of 1989.)

- The civilian unemployment rate declines gradually to an average of 6½ percent in 1989.

- Inflation declines only slightly, after edging upward from 1983 to 1985. (The GNP deflator increases 4.3 percent from 1988 to 1989.)

- Short-term interest rates--in particular, the three-month Treasury bill rate--edge up in 1984 and then trend down slowly. Long-term interest rates are projected to decline about 1½ percentage points from 1984 to 1989.

The projections also include estimates for income shares, which are needed in making revenue projections for budget purposes. The taxable income share projections (see Table I-2 and Figure I-3) can be summarized as follows:

- Corporate profits recover cyclically from an estimated 6.8 percent of GNP in 1983 to 8.3 percent in 1987 and fall back slightly in 1988-1989.

- Wage and salary disbursements decline slightly as a percent of GNP, consistent with the cyclical growth in the profit share. Compensation other than wage and salary disbursements, as a share of total employee compensation, continues rising throughout the projection--contributing to further slight declines in the wage and salary disbursements as a share of GNP.

- Other taxable income, as a percent of GNP, increases from 19 percent in 1984 to 20 percent in 1989. "Other taxable income" includes interest on the public debt, which grows rapidly in the projection. (Other taxable income consists of personal interest, rent, dividends, and income of unincorporated businesses.)

Many factors could prevent the economy from continuing along the path assumed in the projections. For one thing, economic growth has slowed in the industrialized economies, and some economists believe that the

TABLE I-2. LONGER-RUN ECONOMIC PROJECTIONS FOR CALENDAR YEARS 1986-1989

Economic Variable	Actual 1983	Forecast 1984	Forecast 1985	1986	1987	1988	1989
GNP (billions of current dollars)	3,310	3,651	3,995	4,339	4,704	5,084	5,481
Nominal GNP Growth Rate (percent change, year over year)	7.7	10.3	9.4	8.6	8.4	8.1	7.8
Real GNP (percent change, year over year)	3.3	5.4	4.1	3.5	3.5	3.4	3.3
GNP Implicit Price Deflator (percent change, year over year)	4.2	4.7	5.1	4.9	4.7	4.5	4.3
CPI-U (percent change, year over year)	3.2	4.8	5.1	4.9	4.7	4.5	4.3
Civilian Unemployment Rate (percent, annual average)	9.6	7.8	7.3	7.0	6.8	6.6	6.5
3-Month Treasury Bill Rate (percent, annual average)	8.6	8.9	8.6	8.4	8.2	8.0	7.8
Corporate Bond Rate (Moody's AAA)	12.0	12.2	11.6	11.4	11.2	11.0	10.8
Corporate Profits (percent of GNP) a/	6.8 b/	7.3	7.7	7.9	8.3	8.1	8.1
Wage and Salary Disbursements (percent of GNP)	50.3	49.6	49.3	49.2	49.0	48.9	48.7
Other Taxable Income (percent of GNP) c/	18.7	19.0	19.2	19.5	19.8	20.0	20.1

a/ Corporate profits with inventory valuation and capital consumption adjustments, on a national income and product accounts basis. To arrive at "book profits," the basis for tax estimates, these adjustments are removed.

b/ Estimate

c/ Other taxable income consists of personal interest including interest on the public debt, rent, dividends, and income of unincorporated businesses.

TABLE I-3. LONGER-RUN ECONOMIC PROJECTIONS FOR FISCAL YEARS 1986-1989

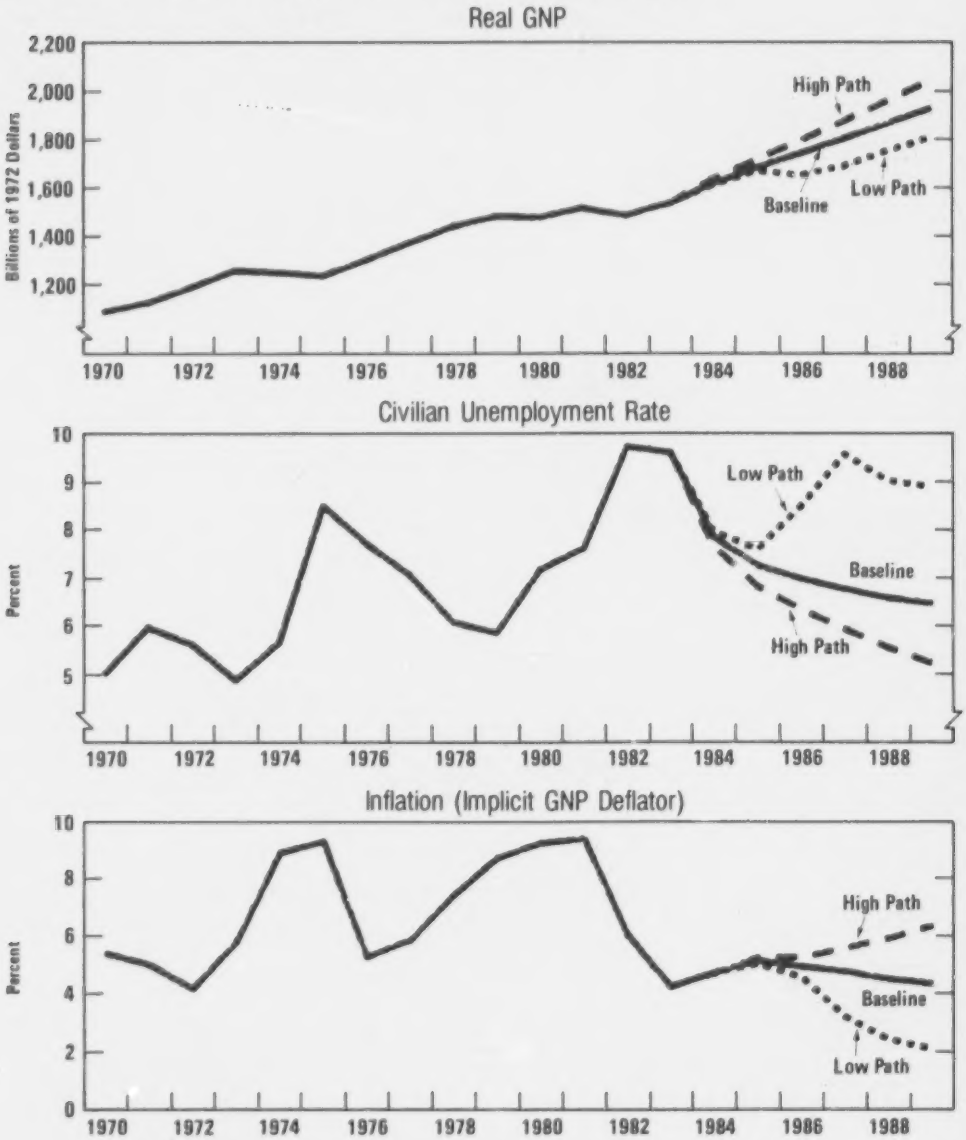
Economic Variable	Actual 1983	Forecast 1984	Forecast 1985	1986	1987	1988	1989
GNP (billions of current dollars)	3,229	3,563	3,910	4,251	4,612	4,987	5,379
Nominal GNP Growth Rate (percent change, year over year)	5.7	10.3	9.7	8.7	8.5	8.1	7.9
Real GNP (percent change, year over year)	1.4	5.7	4.3	3.6	3.5	3.5	3.4
GNP Implicit Price Deflator (percent change, year over year)	4.3	4.4	5.2	5.0	4.8	4.5	4.4
Consumer Price Index, CPI-U (percent change, year over year)	3.5	4.4	5.2	4.9	4.8	4.5	4.4
Civilian Unemployment Rate (percent, annual average)	10.1	8.1	7.4	7.0	6.8	6.6	6.5
3-Month Treasury Bill Rate (percent, annual average)	8.4	8.9	8.7	8.4	8.3	8.0	7.8
Corporate Bond Rate (Moody's AAA)	11.9	12.3	11.8	11.4	11.3	11.1	10.8
Corporate Profits (percent of GNP) a/	6.3	7.2	7.6	7.9	8.2	8.1	8.1
Wage and Salary Disbursements (percent of GNP)	50.5	49.7	49.3	49.2	49.0	48.9	48.7
Other Taxable Income (percent of GNP) b/	18.8	19.0	19.2	19.4	19.7	19.9	20.1

a/ Corporate profits with inventory valuation and capital consumption adjustments, on a national income and product accounts basis. To arrive at "book profits," the basis for tax estimates, these adjustments are removed.

b/ Other taxable income consists of personal interest including interest on the public debt, rent, dividends, and income of unincorporated businesses.

Figure I-2.

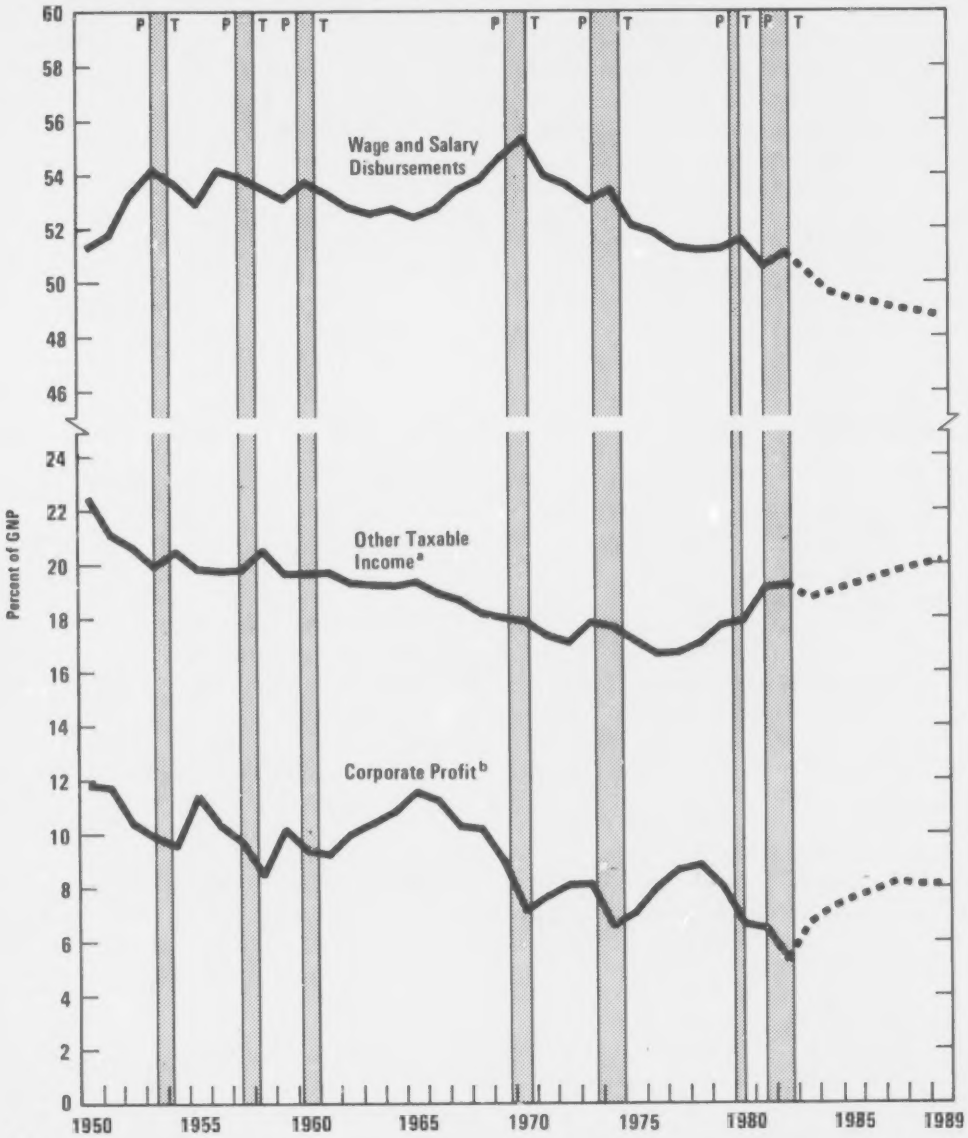
CBO Baseline and Alternative Economic Projections



SOURCES: U.S. Department of Commerce, Bureau of Economic Analysis; U.S. Department of Labor, Bureau of Labor Statistics; Congressional Budget Office.

Figure I-3.

Taxable Income Shares of GNP, Actual and Projected



SOURCES: U.S. Department of Commerce, Bureau of Economic Analysis; Congressional Budget Office.

NOTE: P and T lines indicate business cycle peak and trough dates.

[a] Other taxable income consists of personal interest including interest on the public debt, rent, dividends, and income of unincorporated businesses.

[b] Corporate profits with inventory valuation and capital consumption adjustments, on a national income and product accounts basis. To arrive at "book profits," the basis for the tax estimates, these adjustments are removed.

conditions giving rise to rapid growth in the 1950s and 1960s are no longer present. In addition, the heavy debt burdens of some developing countries may keep the demand for exports from industrial countries below historical trends. A third imponderable is inflation: some economists would question whether such sustained growth would be compatible with stable or slowly declining inflation. Further, if an economic upsurge threatened to spark renewed inflation, the Federal Reserve might take restrictive steps that could temporarily slow growth down. On the other hand, some economists believe that--if the budget deficits are reduced--conditions are in place for much improved economic performance in the remainder of the 1980s. 10/

Finally, the baseline projections do not incorporate a recession. While the average growth projected is in line with historical experience, it would be unusual to have such steady growth. On average, peacetime expansions in the postwar period have averaged only 34 months. 11/

Alternative Economic Projections

Longer-term projections should not be thought of as predictions; actual economic performance may turn out to be very different from the projections. 12/ CBO has prepared two alternative paths in an attempt to

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10/ See for example, John W. Kendrick, "Productivity, Costs and Prices: Outlook for 1983-1984," The AEI Economist (January 1983), and his Presidential Address before the Southern Economic Association, Washington, D.C., November 1983.

11/ The only other period of such uninterrupted growth in the postwar period was the 1961-1969 expansion, which lasted almost nine years but encompassed the buildup for the Vietnam War. Over the entire period for which data are available, beginning in 1854, expansions averaged 33 months. Peacetime expansions averaged only 27 months. Without distinguishing between peacetime and wartime, the average expansion since World War II lasted 45 months. See U.S. Department of Commerce, Bureau of Economic Analysis, Business Conditions Digest, Appendix E (July 1983).

12/ Most often, CBO's outyear projections in the past have proved to be too optimistic. The reasons include the difficulty of anticipating supply shocks, the extent of the productivity slowdown, and changes in monetary policy. Moreover, in some earlier years, the CBO longer-run economic projections represented goals specified by the staffs of the Budget Committees.

bracket the reasonable range of uncertainty surrounding the baseline budget projection. Neither of these alternative paths appears to be consistent with the current economic goals of the Federal Reserve or of the Administration.

High-Growth Path--Low Budget Deficit. The high path assumes real growth similar to that of the early 1960s, averaging about 5.0 percent annually over the projection period--one full percentage point higher than in the baseline projection (see Table I-4 and Figure I-2). Half of the faster economic growth results from more rapid productivity growth than assumed in the baseline, and the other half from stronger demands and fuller capacity utilization. The unemployment rate falls to 5.2 percent by the end of the projection period--somewhat below what most economists believe could be sustained without causing inflation to accelerate. For that reason, inflation accelerates in the outyears. Nominal interest rates are below those in the baseline so that real interest rates attain a path about two percentage points lower than the baseline shortly before the end of the projection period. This economic path serves to reduce the deficit-to-GNP ratio, compared to that implied by the baseline projection.

Low-Growth Path--High Budget Deficit. The low path is reminiscent of the 1970s, when real growth averaged 3.0 percent during the seven years following the 1974 recession; in this projection, real growth averages slightly more than 3 percent per year (see Table I-4 and Figure I-2). A moderate recession is assumed to occur in 1986, with real GNP declining about 1 percent. Unemployment dips to 7.6 percent in 1985, then rises to 9.6 percent two years later before tapering off to 8.9 percent by the end of the projection. However, inflation falls to a 2 percent annual rate by the end of the projection--substantially below the baseline. In this low-growth alternative, interest rates are above the baseline in 1984-1985, but below in 1986-1989. The deviations from the baseline economic assumptions tend to raise the deficit-GNP ratio.

Budget Projections Under Alternative Economic Paths

Under the baseline economic assumptions, federal outlays as a percent of GNP decline slightly in 1985 but then rise gradually to 24.9 percent in 1989--one point above the 1984 level (see Table I-5). Revenues as a percent of GNP rise slightly during the projection period. The net result is that the deficit rises from 5.3 percent of GNP in 1984 to 6.1 percent in 1989.

As shown in Table I-5, the budget estimates are substantially affected by different economic assumptions. Under the high economic growth path, the deficit is reduced to 3.1 percent of GNP by 1989--about $140 billion below the baseline. Conversely, under the low economic growth path, the

TABLE I-4. ALTERNATIVE ECONOMIC PROJECTIONS (By calendar year)

Economic Variable	1984	1985	1986	1987	1988	1989
GNP (billions of current dollars)						
High-growth alternative	3687	4077	4484	4944	5467	6064
Baseline	3651	3995	4339	4704	5084	5481
Low-growth alternative	3634	3954	4095	4313	4585	4826
Real GNP (percent change, year over year)						
High-growth alternative	6.4	5.1	4.5	4.5	4.4	4.3
Baseline	5.4	4.1	3.5	3.5	3.4	3.3
Low-growth alternative	4.9	3.6	-0.9	2.1	3.8	3.1
GNP Implicit Price Deflator (percent change, year over year)						
High-growth alternative	4.7	5.2	5.2	5.5	5.9	6.3
Baseline	4.7	5.1	4.9	4.7	4.5	4.3
Low-growth alternative	4.7	5.0	4.5	3.2	2.4	2.0
CPI-U (percent change, year over year)						
High-growth alternative	4.8	5.2	5.2	5.5	5.9	6.3
Baseline	4.8	5.1	4.9	4.7	4.5	4.3
Low-growth alternative	4.8	5.0	4.5	3.2	2.4	2.0
Civilian Unemployment Rate (annual average, percent)						
High-growth alternative	7.7	6.8	6.3	5.9	5.6	5.2
Baseline	7.8	7.3	7.0	6.8	6.6	6.5
Low-growth alternative	8.0	7.6	8.5	9.6	9.0	8.9
3-Month Treasury Bill Rate (annual average, percent)						
High-growth alternative	8.0	7.6	7.1	7.3	7.3	7.4
Baseline	8.9	8.6	8.4	8.2	8.0	7.8
Low-growth alternative	10.4	9.5	8.0	7.0	6.0	5.6

TABLE I-5. BASELINE BUDGET PROJECTIONS UNDER ALTERNATIVE ECONOMIC ASSUMPTIONS (By fiscal year)

	1984	1985	1986	1987	1988	1989
In Billions of Dollars						
Revenues						
High-growth alternative	668	750	825	913	1024	1137
CBO baseline projection	663	733	795	863	945	1016
Low-growth alternative	660	727	754	782	843	890
Outlays						
High-growth alternative	850	917	995	1089	1202	1323
CBO baseline projection	853	928	1012	1112	1227	1342
Low-growth alternative	856	936	1020	1112	1200	1280
Unified Budget Deficit						
High-growth alternative	182	168	170	176	178	186
CBO baseline projection	190	195	217	248	282	326
Low-growth alternative	196	209	267	329	357	390
As a Percent of GNP						
Revenues						
High-growth alternative	18.6	18.8	18.8	18.9	19.2	19.2
CBO baseline projection	18.6	18.7	18.7	18.7	19.0	18.9
Low-growth alternative	18.6	18.8	18.5	18.5	18.6	18.7
Outlays						
High-growth alternative	23.7	23.1	22.7	22.6	22.6	22.4
CBO baseline projection	23.9	23.7	23.8	24.1	24.6	24.9
Low-growth alternative	24.1	24.2	25.0	26.2	26.5	26.9
Unified Budget Deficit						
High-growth alternative	5.1	4.2	3.9	3.7	3.3	3.1
CBO baseline projection	5.3	5.0	5.1	5.4	5.6	6.1
Low-growth alternative	5.5	5.4	6.5	7.8	7.9	8.2

deficit rises to more than 8 percent of GNP in 1989--$60 billion higher than the baseline. With the latter alternative, the deficit rises sharply as a percent of GNP in 1986 and 1987, reflecting the recession assumed for 1986.

In conclusion, the band of uncertainty around the baseline budget projections is quite wide. But even the high-growth path produces unprecedented deficits for a peacetime expansion. More detailed discussions of the budget projections are contained in Chapter III of this report and in a separate CBO report, Baseline Budget Projections for Fiscal Years 1985-1989.

CHAPTER II. THE CURRENT ECONOMIC SITUATION

A little over a year ago, the U.S. economy was at the bottom of the worst recession since World War II (see Figure II-1). There was some consensus among forecasters that, although the downturn had come to an end, the pace of recovery was likely to be sluggish. High interest rates were expected to weaken the overall rate of growth, and unemployment was considered likely to remain high.

In fact, the recovery has been normal by postwar standards. Unemployment has fallen sharply, and business investment, housing, and auto sales have been relatively strong. Though the deceleration of inflation may have ended temporarily, the pace of price increases has not picked up as many had feared. This chapter reviews the past year's experience and its implications for the outlook. Three themes emerge:

- o A sustained reduction of inflation from its levels of the late 1970s and early 1980s, together with continued normal recovery in resource utilization, seems possible.

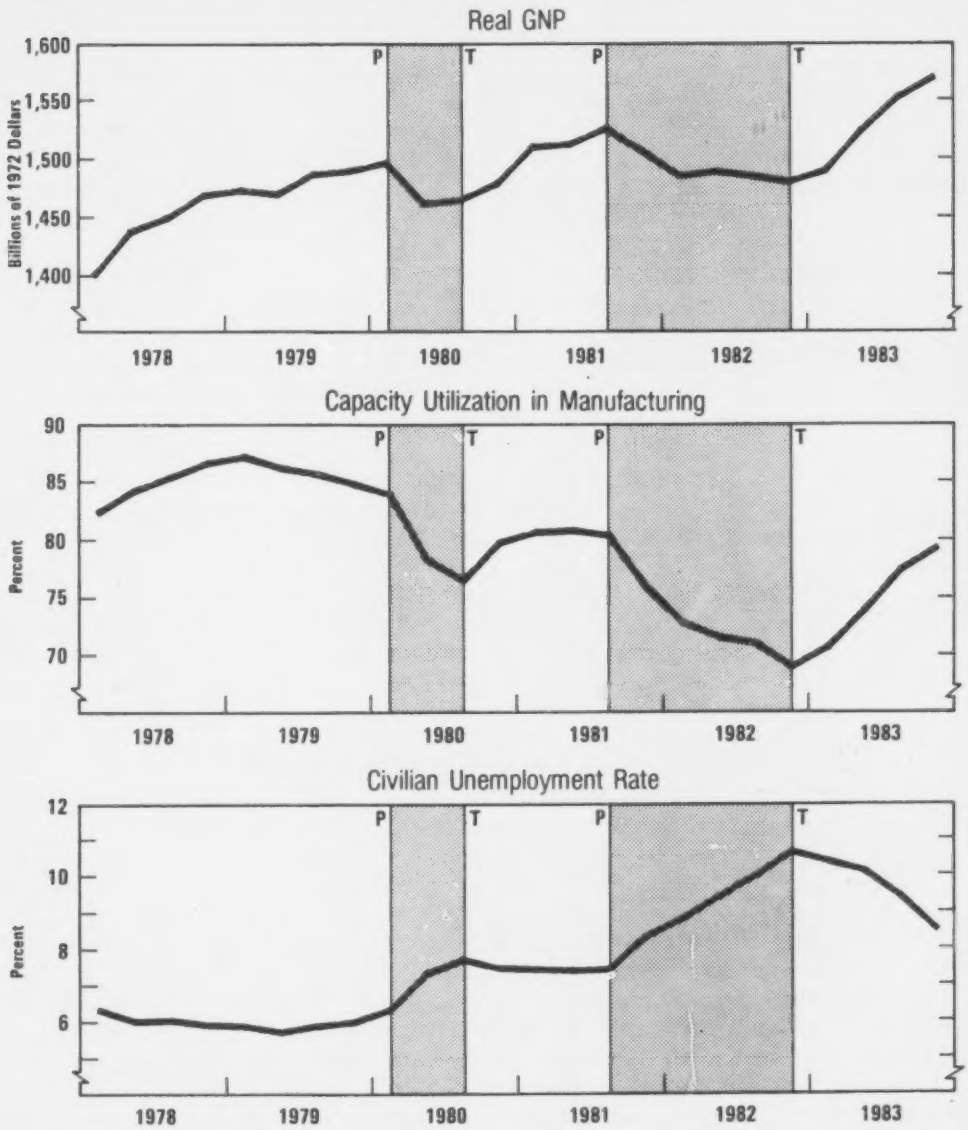
- o Interest rates remain high largely because of the juxtaposition of large budget deficits with an anti-inflationary monetary policy. While these rates have not reduced fixed investment, they have distorted its composition and have dramatically reduced net exports.

- o The deficit has been financed by corporate savings and a state and local fiscal surplus in addition to capital from abroad. How long this pattern can be sustained, however, is not clear.

The Recovery Thus Far. The first signs of recovery came in the summer of 1982, when a sharp fall in interest rates brought housing starts out of the long slump they had been in since 1978. Inventories were still being adjusted down in the fourth quarter of 1982, so recovery in total output did not come immediately. But in early 1983, when the rate of inventory drawdown started to slacken, output and employment began to improve. One of the first results was a sharp growth in consumer spending, particularly in purchases of motor vehicles. Investment intentions, too, began to improve. By the third quarter of 1983, output had recovered to the previous peak level of 1981. In December, the civilian unemployment rate was down to 8.2 percent, a rate last experienced in 1981.

Figure II-1.

Real GNP, Capacity Utilization, and Unemployment



SOURCES: U.S. Department of Commerce, Bureau of Economic Analysis; U.S. Department of Labor, Bureau of Labor Statistics; Federal Reserve Board.

NOTE: P and T lines represent business cycle peak and trough dates.

The inflation rate--which was dramatically reduced by the recession--has not shown signs of significant acceleration, despite the strength of the recovery (see Figure II-2). The sharp declines of 1981 and 1982 were not repeated in 1983, but most measures of inflation show a deceleration of between five and seven percentage points from the peak levels of 1980. Some analysts point to worrisome changes in indicators such as capacity utilization and vendor performance, which may presage some acceleration of inflation in 1984. But there seems to be no immediate risk of a sharp increase.

Despite the improvement in inflation and the remaining slack in the economy, a combination of expansive fiscal policy and relatively tight monetary policy has kept interest rates at extraordinarily high levels (see Figure II-2).

The federal deficit has ballooned in the past two years, not only because of the recession but also because of tax cuts and spending increases that imply a postwar fiscal stimulus to the economy of record proportions during peacetime. At the same time, the Federal Reserve is pursuing anti-inflationary policies. These conflicting policies have raised real interest rates, though it remains to be seen whether the increase is large enough to overcome the fiscal stimulus and slow the recovery.

RECENT TRENDS IN INFLATION, OUTPUT, AND RESOURCE USE

Although the current economic expansion is vigorous, it shows no sign of pushing up inflation. The expansion has brought an unusually large decline in unemployment, though the unemployment rate is still much higher than at the comparable stage of any other postwar recovery, and the reduction in unemployment was purchased at the cost of below-normal productivity growth. Output data show that the recovery has been nearly average, slowing in the fourth quarter of 1983.

Inflation

The deceleration of inflation since 1980 has been dramatic (see Figure II-3). The most commonly used measure of inflation, the Consumer Price Index for all urban consumers (CPI-U) rose 13.5 percent in 1980 and only 3.2 percent in 1983. 1/ The fixed-weight GNP deflator, a broad measure of

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1/ The CPI had some faults as a measure of inflation in the period through the end of 1982 (see previous CBO reports). Other measures of inflation show similar, though less dramatic, declines.

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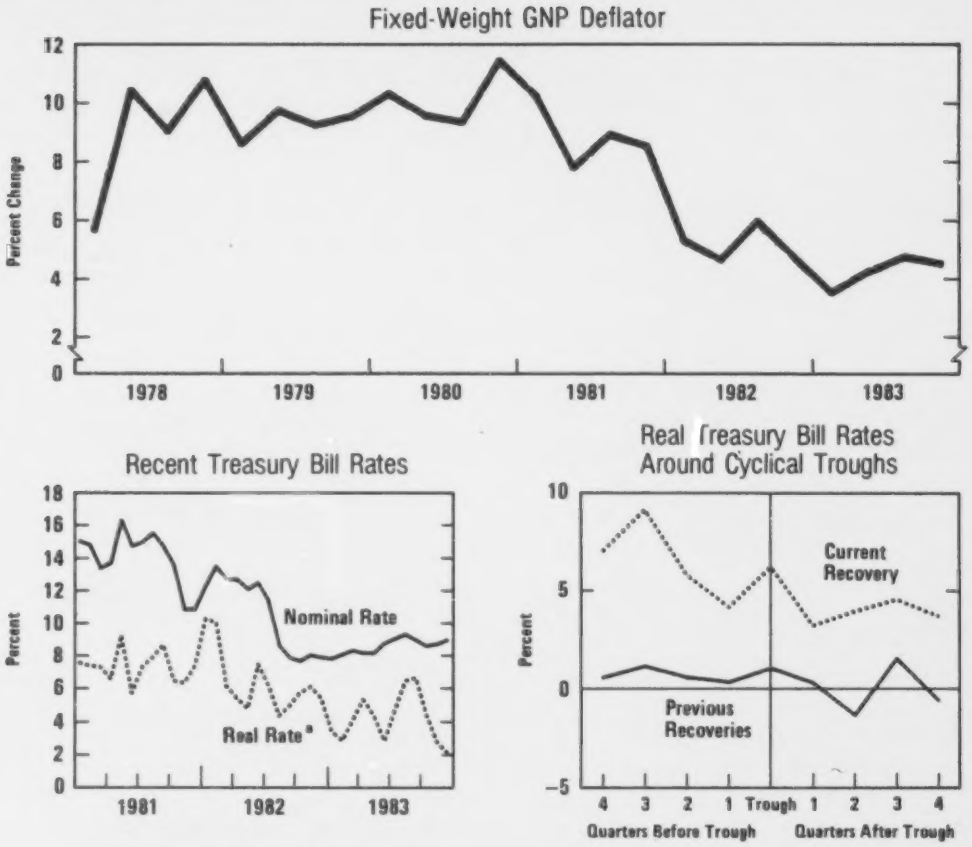
Figure II-2.

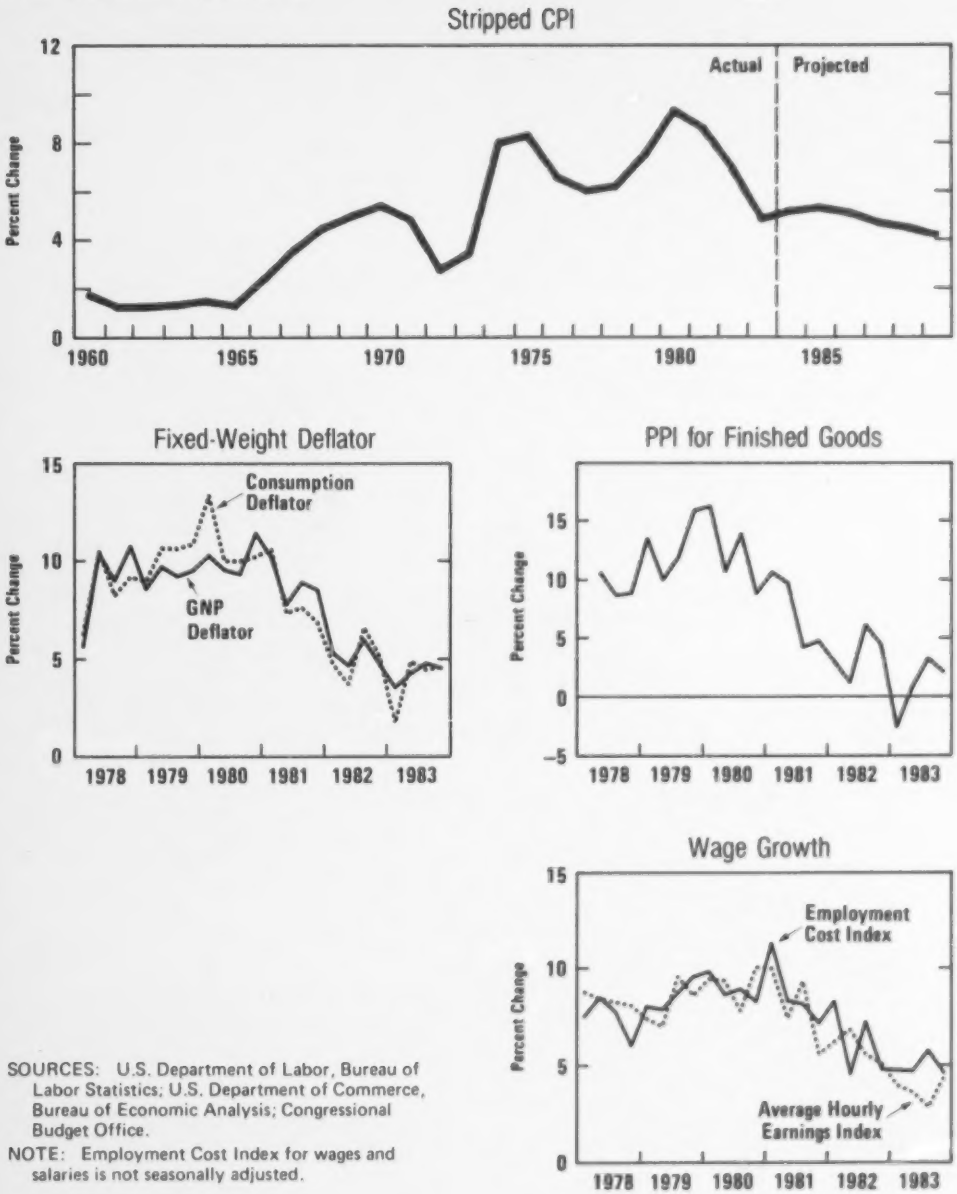
Inflation and Interest Rates



SOURCES: U.S. Department of Commerce, Bureau of Economic Analysis; Federal Reserve Board; Congressional Budget Office.

[a]Unless otherwise specified, real interest rates in this report are calculated by subtracting from the nominal interest rate the rate of inflation in the succeeding quarter. This value, the "ex post real rate," is a proxy for the unobserved real rate, which is the nominal rate less *expected* inflation over the life of the instrument.

Figure II-3.
The Decline in Inflation

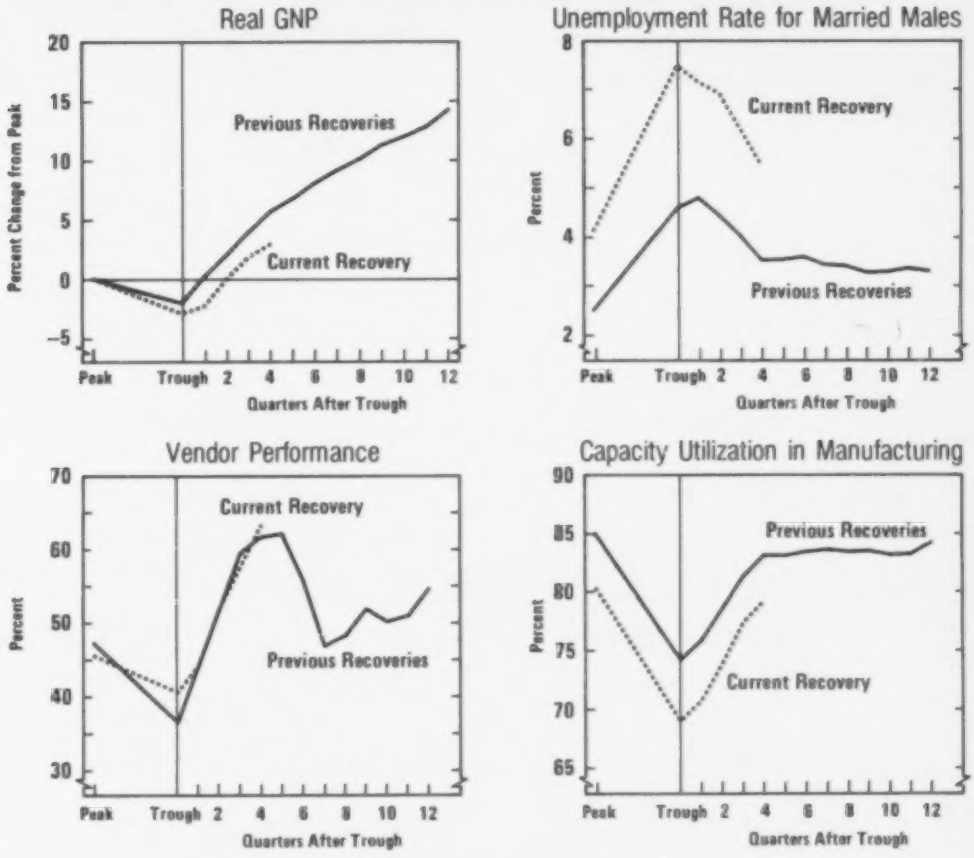


SOURCES: U.S. Department of Labor, Bureau of Labor Statistics; U.S. Department of Commerce, Bureau of Economic Analysis; Congressional Budget Office.

NOTE: Employment Cost Index for wages and salaries is not seasonally adjusted.

Figure II-4.

Measures of Economic Slack, Compared with Previous Recoveries



SOURCES: U.S. Department of Commerce, Bureau of Economic Analysis; U.S. Department of Labor, Bureau of Labor Statistics, Federal Reserve Board; Purchasing Management Association of Chicago.

NOTE: "Vendor performance" is the percent of purchasing agents reporting slower deliveries. Previous recoveries include postwar recoveries before 1960.

production costs in the economy, grew 9.8 percent in 1980 and only 4.3 percent in 1983. A measure of inflation based on the CPI that takes out the direct impact of energy price increases and other relatively independent price changes (the stripped CPI) increased 9.3 percent in 1980 and only 4.9 percent in 1983. 2/

The decline in inflation is not surprising in view of the almost unprecedented amount of slack in the economy (see Figure II-4), and the reversal of special factors that contributed substantial amounts to the rate of inflation in previous years. The downturn in energy prices and the appreciation of the dollar together reduced the rate of inflation by more than a percentage point in 1983, and contributed more than two percentage points to lower inflation in 1982. In 1979, by contrast, the oil price increase added about six points to the inflation rate (see Figure II-5).

Factors Adding to Inflation. The consensus forecast is that inflation will accelerate somewhat in the next few years: in some forecasts the acceleration is substantial. However, this outcome is not inevitable. Recent history suggests that inflation does not begin to accelerate for some time after a recession trough. Taking an average of postwar recessions, inflation has been lower after three years of recovery than at the trough of the recession--because of the very large declines in inflation following the recessions of 1973-1975 and 1980 (see Figure II-6).

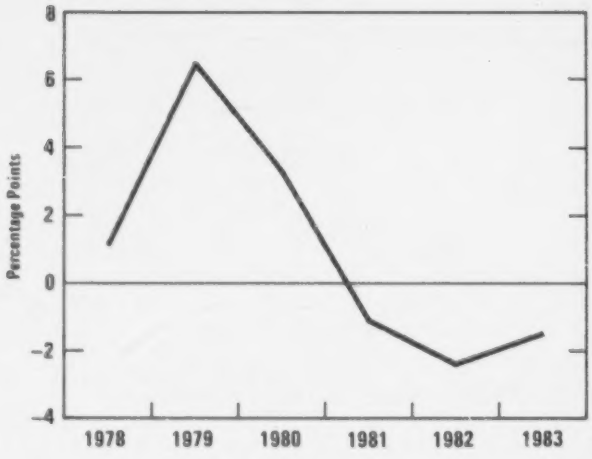
2/ The stripped CPI measure used in this report is the CPI less the direct contribution of food prices, energy prices, and the price indexes for used cars and for homeownership before the end of 1982. Food prices and energy prices are excluded directly because their movements are disproportionately influenced by factors such as harvests and energy shocks that are not closely linked to the underlying domestic inflation process in the United States. However, to the extent that increased food or energy prices cause other producers to raise their prices (the "wage-price spiral") the impact of these prices will be included in the stripped CPI. This is particularly important in the case of energy: only about half of all the oil consumed in the economy is used as gasoline, fuel oil, and so on, by households, and the cost of the other half is included in the stripped CPI. Thus oil prices can have a substantial impact even on the stripped CPI. Used car prices and homeownership before December 1982 are excluded because of doubts that the CPI measures them in a way consistent with the requirements of inflation analysis. A revision of the CPI treatment of homeownership, implemented for the period since December 1982, corrects the problem in the treatment of housing in the CPI-U. The CPI-W, used for indexing Social Security benefits and many wage contracts, does not yet use the revised treatment.

Figure II-5.

Combined Contribution of Oil Prices and Exchange Rate to Inflation

SOURCE: Congressional Budget Office.

NOTE: Oil prices and exchange rates affect consumer prices after a lag, presumed for the purposes of this chart to be one year. The effects on inflation are derived from commonly used rules of thumb: a 10 percent increase in the dollar exchange rate *reduces* consumer prices by 1 percent, while a 10 percent increase in the oil price *increases* consumer prices by about 1.4 percent.



Thus, if there is good reason for expecting a sharp resurgence of inflation in the next three years, it must lie in unusual features of the recovery. Analysts point to four that cause concern:

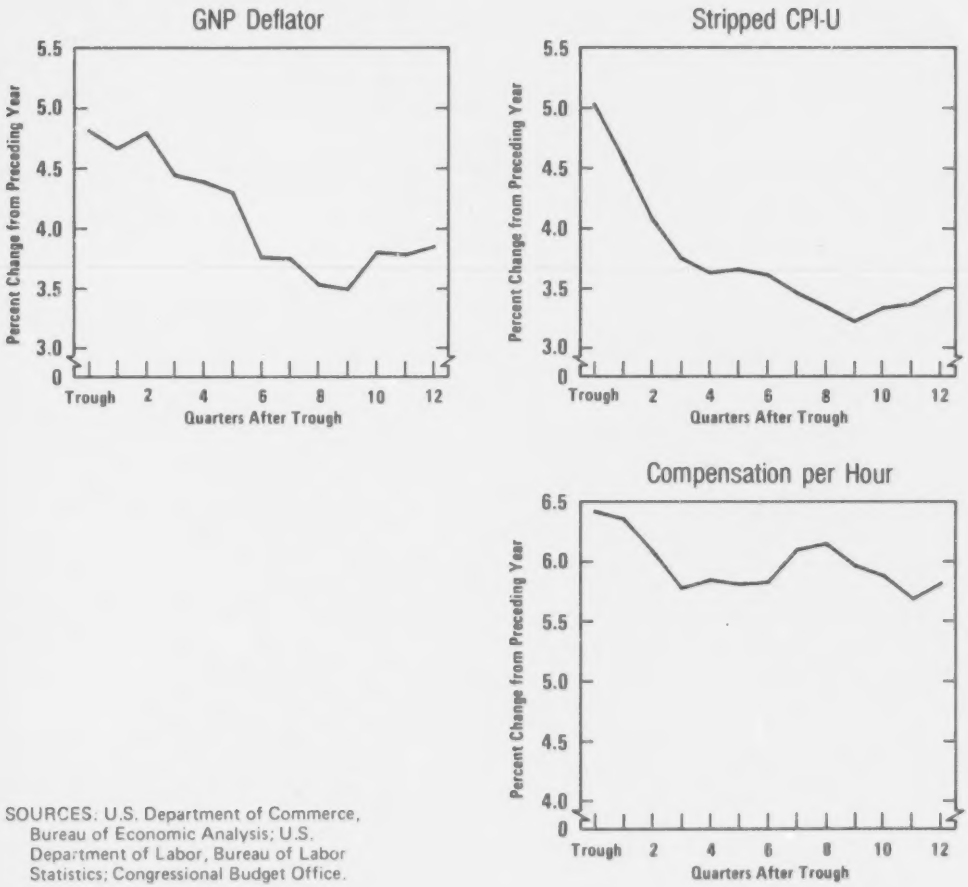
- The dollar exchange rate appears much higher than is justified on the basis of comparative costs of goods and resources here and abroad, and this apparent imbalance could be corrected in a short period. Some expect the dollar to decline by as much as 20 percent, which because of its effects on the price of imported goods could add about 2 percent to the price level.

- Capacity in manufacturing industries has grown more slowly during the early 1980s than it has in previous recessionary periods (see Figure II-7). Thus some industries may reach bottlenecks earlier than in previous cycles. The percentage of purchasing agents reporting slower deliveries has recently risen slightly above the average at the corresponding state of previous cycles: in the past, this measure has been a good index of capacity shortages (see Figure II-4). But overall capacity utilization in manufacturing is still well below where it has been at the corresponding stage of previous cycles.

- Wage give-backs have been particularly prominent in the major collective-bargaining agreements of the past two years. Some analysts believe that the recovery of employment will bring a reversal of these give-backs, and hence larger-than-usual wage

Figure II-6.

Inflation in First Three Years After Cyclical Troughs (Average of Postwar Cycles)

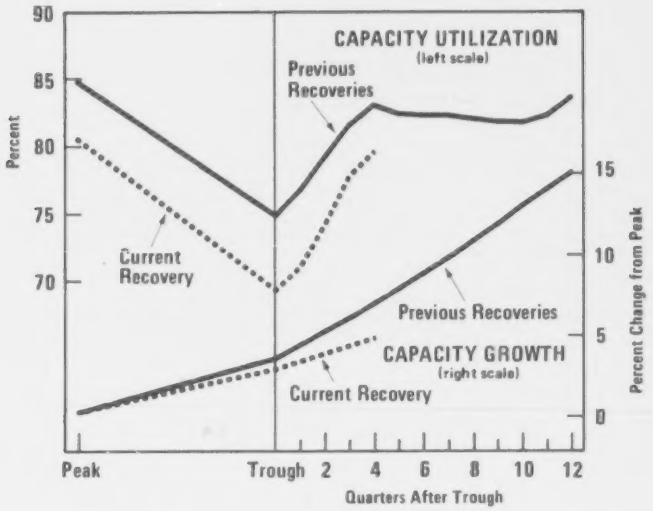


SOURCES: U.S. Department of Commerce, Bureau of Economic Analysis; U.S. Department of Labor, Bureau of Labor Statistics; Congressional Budget Office.

increases. 3/ While these major agreements cover only a small proportion of all workers, other wages often follow their lead.

3/ Many of the agreements with give-backs have also called for catch-up in the second or third year of the contract. Even if these catch-up clauses are not all implemented, there is scope for some acceleration in wage gains if the settlements reached in 1984, a relatively heavy bargaining year, do not contain the give-backs of the past two years.

Figure II-7.
Growth of Manufacturing Capacity and Capacity Utilization



SOURCE: Federal Reserve Board.

- Food inflation is expected to accelerate temporarily in 1984. Meat prices are likely to rise rapidly as smaller herds, the result of last summer's drought and higher feed prices, reduce meat supplies. Food prices may also rise temporarily in the first quarter of 1984 because of the unusually cold winter.

In addition, some analysts are concerned about recent and expected future rates of money growth. One concern is that a return to high rates of money growth might stimulate the economy to a point at which inflation would accelerate. Recent evidence, discussed later, suggests that the relatively rapid money growth in late 1982 and early 1983 is not likely to have this effect; and in any case money growth slowed in the second half of 1983, although some think it may pick up again as a consequence of continued high deficits. Another view is that the strong money growth of 1982-1983 has already laid the foundation for higher inflation in 1984, although the more recent slowing in money growth should prevent high economic growth (and, in some views, might substantially slow recovery). This argument requires that high money growth should tend to increase inflation independently of its effect on economic growth, at least in part. The evidence that there has been such an independent effect of money growth on inflation in the early 1980s is, however, weak (see the box).

Offsetting Factors. At the same time, several factors may moderate price increases:

INFLATION AND POLICY CHANGE

The decline in the inflation rate in the early 1980s accompanied a very important change in the implementation of monetary policy in 1979: the shift toward controlling monetary aggregates rather than the interest rate. Some analysts predicted that such a policy would produce a very sharp decline in the inflation rate by convincing people that nominal GNP would be held to a low growth rate. Wages, for example, would increase by less because workers and employers would no longer expect company revenues to grow enough to pay for large wage increases. This line of argument suggests that substantial reductions in inflation are possible without the large sacrifices of output and increases in unemployment implied by more traditional theories of inflation. In fact, there have been two recessions since 1979, of which the second was by many measures the worst in the postwar period.

Has there been a larger reduction in inflation than these recessions can account for? The evidence on this point is not decisive, but suggests that the policy change since 1979 has not brought about additional reduction in the inflation rate over and above what could have been expected on the basis of the tradeoff between inflation and unemployment postulated by most economists. Reductions in price inflation have been very much in line with what traditional models indicate (though not with the forecasts of most modelers, who didn't expect such an extended period of stringency).

By some measures, the reduction in wage inflation has been larger than can be explained by the traditional models. The index of average hourly earnings has decelerated from a 9.3 percent increase during 1980 to 3.7 percent during 1983, about 1½ to 2 percentage points more than can be accounted for by traditional models. But other measures of wage and compensation growth differ: the employment cost index for wages, which is usually thought to be the best measure of the growth of wages, has decelerated by much less than the average hourly earnings index (see Figure II-5), going from 9.0 percent in 1980 to 5.0 percent in 1983.

Some would argue that the Federal Reserve has not in fact been able either to reduce the rate of money growth significantly or to reduce its volatility, in part because of a number of imperfectly understood changes connected with the deregulation of the financial system. This may explain why the change in monetary policy has not had a clearly distinguishable impact on inflation.

- In the longer run, food prices may not keep up with other prices. Some analysts think that crop supplies are likely to be large, given current agricultural policies. Continuation of these policies implies either that the government will have to stockpile more and more agricultural production or reduce acreage planted, or that crop prices will not in the long run keep up with inflation.

- Oil producers are once again facing demand well below both their current capacity to produce and their historical production levels. Economic pressures within OPEC make it difficult to observe the production limits agreed upon as recently as last spring: production above quota by the poorest members of OPEC has forced Saudi production down to only 50 percent of its 1980 level. The recovery in economic activity abroad has been disappointing so far (see Chapter IV), and the rising dollar exchange rate means that countries other than the United States have not benefited from the dollar oil price declines in the past two years. Thus oil demand in the rest of the world remains very depressed. In addition, conservation continues everywhere, the result of the 1974 and 1979 price increases.

- Used car prices may slow down. They have contributed more than one-half of a percentage point to the annualized inflation rate in 1983. The more than 1 percent per month increase in used car prices in that period was fueled by the demand for large cars as it became clear that lower oil prices were likely to continue for a considerable period. As auto production increases, the price of used cars should increase less rapidly and may even fall.

Output and Employment

The expansion in output during the current recovery has been nearly average. The capacity utilization rate has grown a little faster than usual, because the growth of productive capacity appears to have been below par during the whole of the recent cycle (see Figure II-7). The decline in capacity utilization in the recession was about in line with previous cycles. However, its level remains well below that of previous recoveries because the economy was in bad shape even at the beginning of the 1981 economic downturn, due to the shortened recovery from the previous recession.

The civilian unemployment rate has declined in the course of the recovery from 10.7 percent to 8.2 percent. The decline is larger than the average decline in the unemployment rate in previous postwar recoveries, and larger than appears to be compatible with the growth in output during the first year of this recovery; it may be the result of unusually low

productivity growth for this stage of the recovery, or of a labor shake-out at the end of the recession that brought the unemployment rate to extremely high levels. While all indicators concur that the labor market has improved substantially, the published unemployment rate may overstate the extent of the improvement.

The discrepancy between the rapid employment growth measured by the Labor Department's household employment survey and the somewhat more moderate growth in jobs reported by employers is unusually large. This discrepancy, after adjusting for differences in scope, amounts to about 600,000 workers over the past year--half a percentage point of the reduction in the unemployment rate--and may be due to errors and biases in either survey. A possible explanation is that the count of jobs has missed some of those in new enterprises formed during the recovery from recession, and thus may understate the true increase in employment in the recovery. In the absence of hard evidence, all the measures of labor market performance must be regarded with caution.

Productivity Growth

Some analysts expected the growth of productivity in the current recovery to be relatively strong, for three reasons:

- The influx of young people into the labor force, which may have held down the growth of productivity in the 1970s, is slowing. The Bureau of Labor Statistics projects an actual decline of 1.3 percent a year in the labor force aged 16 to 24 between 1982 and 1990, as compared with annual increases of 4.5 percent in the decade of the 1960s and 2.7 percent in the 1970s. 4/ The workers who joined the labor force in the last decade are gaining job experience and becoming more productive. As this cohort matures in the labor force, both the level and the trend rate of growth of productivity will improve. And slower labor force growth means that more of each year's investment can go to increasing productivity rather than equipping new workers.

- In recent years, the share of GNP being spent on research and development has increased substantially (see Figure II-8). 5/ Most

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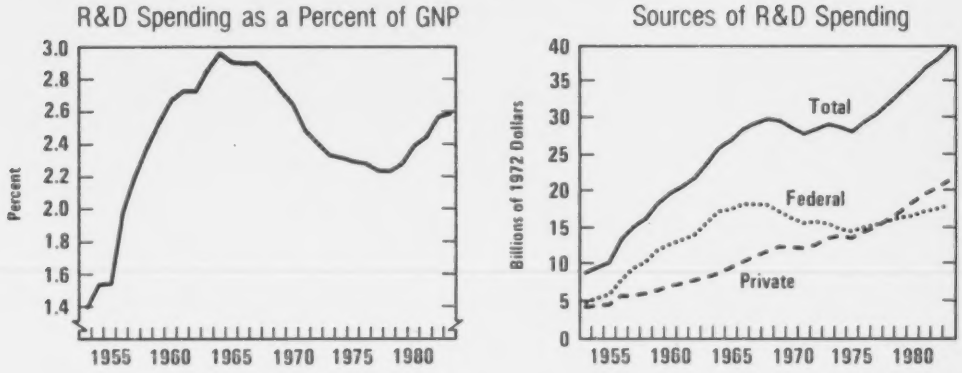
4/ Howard N. Fullerton, Jr. and John Tschetter, "The 1995 Labor Force: A Second Look," Monthly Labor Review (November 1983), p. 4.

5/ See also Congressional Budget Office, Federal Support for R&D and Innovation, forthcoming.

Figure II-8.

Research and Development Spending



SOURCES: National Science Foundation; U.S. Department of Commerce, Bureau of Economic Analysis.

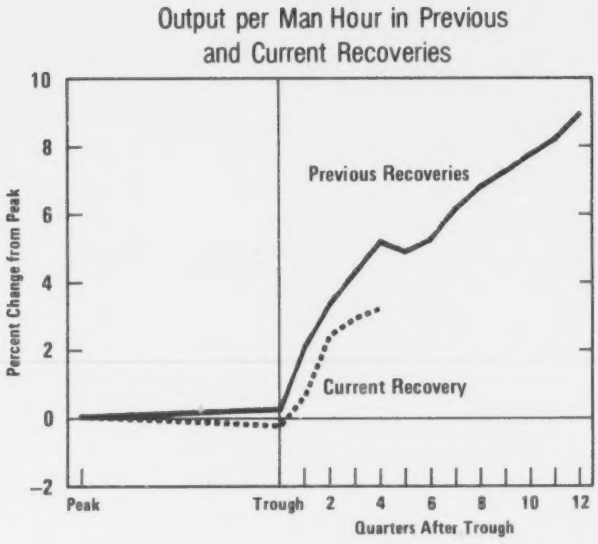
estimates, though subject to great uncertainty, suggest that the increased R&D spending, particularly for private R&D, could add significantly to the trend rate of growth of output and productivity, thereby permitting the economy to achieve higher growth rates without acceleration of inflation.

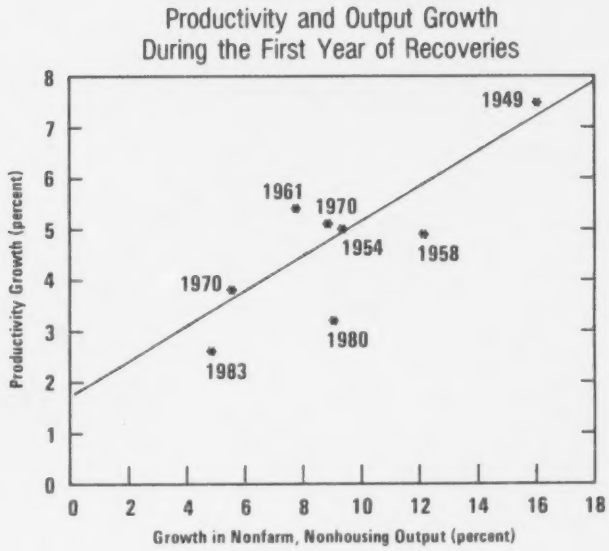
- Energy price increases, according to some analyses, reduced productivity growth during the 1970s and early 1980s. While the adjustment to the 1979-1980 price increases is most likely not yet complete, the reduction in dollar oil prices since 1980, and the prospective stability of oil prices in the future, should mean that any slowing of productivity growth due to energy price changes will diminish and may eventually be reversed.

Contrary to these expectations, productivity growth has so far been below average in this cyclical recovery (see Figure II-9). Nonfarm business productivity grew at only about a 1 percent rate in the fourth quarter of 1983. This may be because layoffs during the recession were so high that enterprises wanting to increase output during the recovery had to hire more workers rather than increasing the productivity of those already on the payroll. And if, as suggested above, the growth of man-hours (measured from the job survey) understates the true growth of labor input in the recovery so far, productivity growth could turn out to be even less than these estimates indicate.

Figure II-9.

Productivity Growth



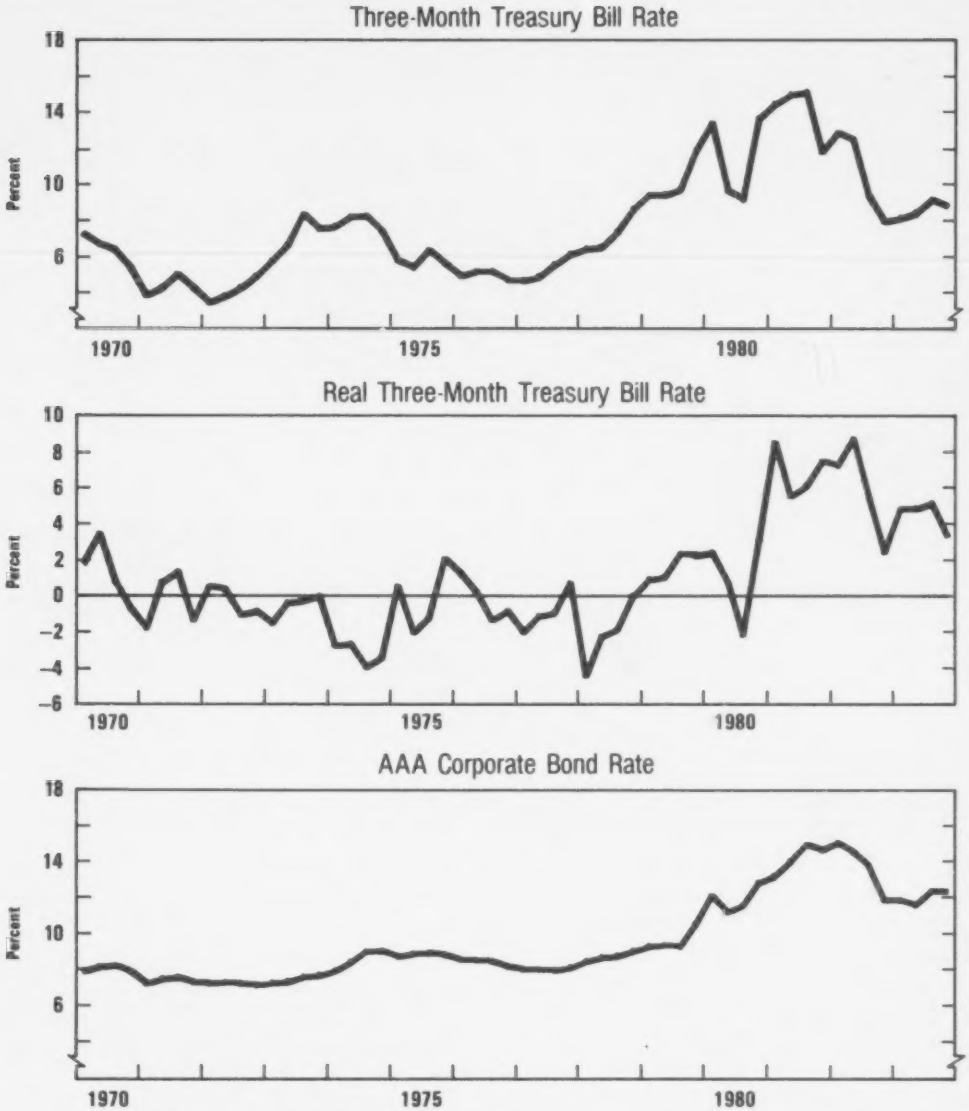


SOURCES: U.S. Department of Commerce, Bureau of Economic Analysis; U.S. Department of Labor, Bureau of Labor Statistics; Congressional Budget Office.

NOTE: The regression line, covering recoveries from 1949 to 1980, shows the normal tendency for productivity to be higher when output growth is higher. In the current recovery, productivity growth is lower than would be expected, given output growth close to the average.

Figure II-10.

Selected Interest-Rate Measures



SOURCES: Federal Reserve Board; Congressional Budget Office; Moody's Investors' Service.

NOTE: Unless otherwise specified, real interest rates in this report are calculated by subtracting from the nominal interest rate the rate of inflation in the succeeding quarter. This value, the "ex post real rate," is a proxy for the unobserved real rate, which is the nominal rate less *expected* inflation over the life of the instrument.

TABLE II-1. CURRENT LEVELS OF INTEREST RATES AND RECENT PEAKS AND TROUGHS (Monthly averages of daily figures, in percent)

Rate	December 1983	Highest 1981-1982 Level	Lowest 1982 Level
3-Month Commercial Paper	9.5	17.6	8.5
3-Month Treasury Bills			
Nominal	9.0	16.3	7.8
Ex-post real	2.1	10.3	4.4
Prime Bank Loan Rate	11.0	20.5	11.5
25-Year Mortgage Rate (Fixed-rate commitment)	13.4	17.6	13.8
Moody's AAA Corporate Bond Rate	12.6	15.5	11.7

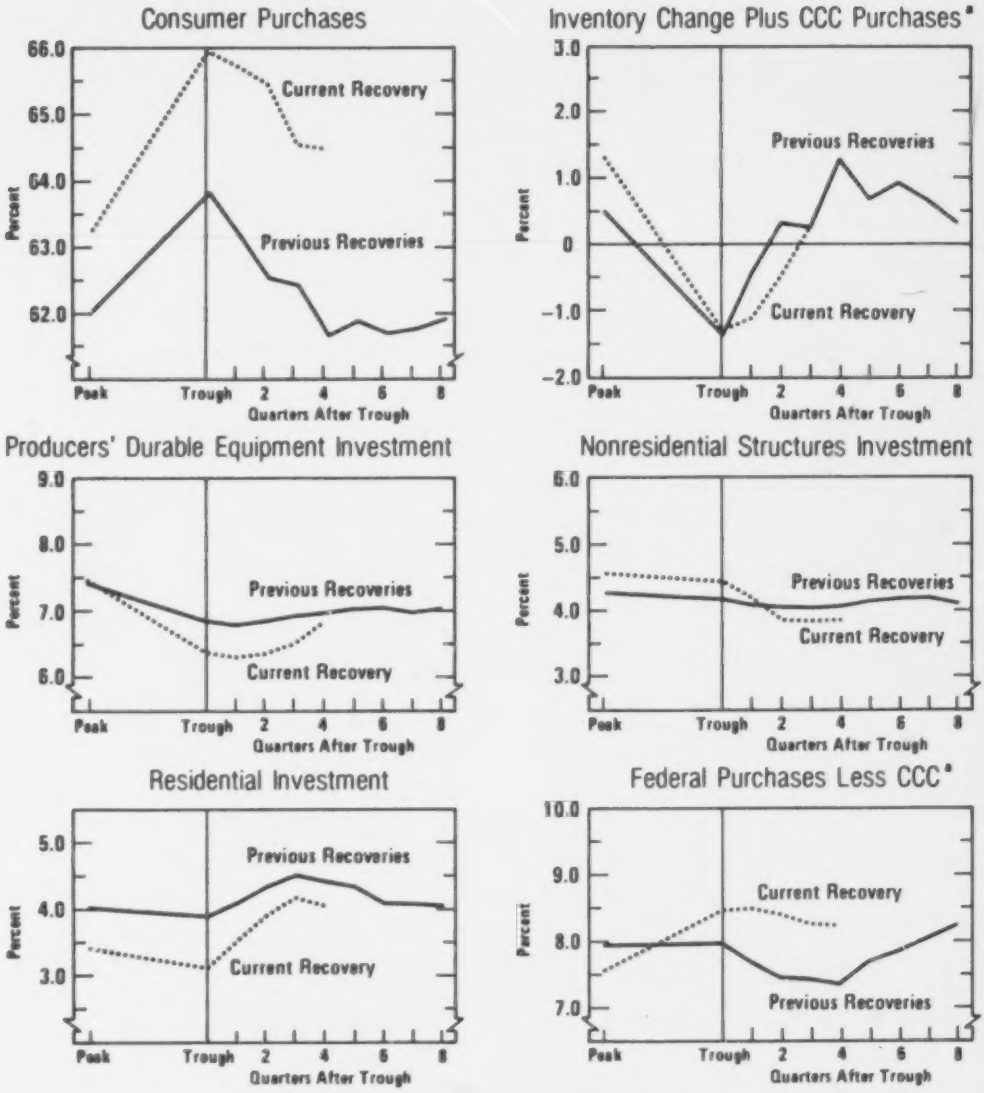
SOURCES: Federal Reserve Board; Federal Home Loan Bank Board.

INTEREST RATES AND THE COMPOSITION OF SPENDING

Fluctuations in interest rates played a major role in causing both the recession and the recovery. Their rise to record levels in 1981 and 1982 helped cause and prolong the recession, and their sharp decline in mid-1982 helped bring it to an end. Both real and nominal rates remained at historically high levels as the recovery began, and some even started drifting upward again (see Figure II-10 and Table II-1). This raised fears that business investment might be discouraged and the recovery weakened. Thus far, these fears have proved largely unfounded. Although output remains unusually weak in some sectors that were hard hit by the recession, overall domestic spending seems to be following a normal recovery pattern (see Figure II-11). The major break from the historical pattern of recoveries has been in the foreign sector.

Figure II-11.

Composition of Domestic Spending (As a Percent of Total Domestic Spending)



SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis.

NOTE: Averages for previous cycles have been adjusted for long-term trends in the composition of domestic spending.

* Commodity Credit Corporation (CCC) purchases of stocks of farm products are treated conventionally in the National Income and Product Accounts as a component of federal nondefense purchases and of final sales, although they are in many ways similar to inventory-building by farmers.

Net Exports

Real net exports have declined since 1980 by $48 billion in 1972 dollars, or about 3 percent of GNP. The immediate causes are the rise in the exchange rate, which has gone up by about 50 percent since mid-1980, and the loss of export markets due to the recession in other developed countries and the debt crisis in some developing countries. The decline in real net exports has put much of the burden of the federal deficit on firms involved in exports and import competition. This situation is likely to continue: net exports have probably not completely adjusted to the recent increases in the exchange rate and are likely to worsen temporarily, even if the dollar should fall in the near future.

Business Investment

The growth of business fixed investment has so far been better than average by the standards of postwar business cycles, and surveys of capital spending intentions point to a continued expansion along a normal cyclical path.

The strength of investment is heavily concentrated in producers' durable equipment. Investment in structures has fallen in the recovery, perhaps partly because the boom in office building construction was slowed by a rise in vacancy rates. Construction of other commercial buildings (shops) has turned up slightly, while construction of industrial buildings, as well as offices, has fallen (see Figure II-12). As the discussion later in this section will show, capital costs have much to do with the uneven recovery.

Housing

A housing recovery started in the summer of 1982, following the easing of monetary policy. Housing starts rose from 1.1 million at an annual rate in the third quarter of 1982 to 1.8 million in the summer of 1983, and have since leveled off. The backlog of demand from recent household formations, and the increase in household wealth in recent years, suggest still strong underlying demand for housing. But for several reasons, real housing expenditure does not seem likely to return to the levels of the late 1970s:

- Lower inflation and tax rates each reduce the incentive to purchase owner-occupied housing, especially as compared with other investments. Partly as a result of those factors, the overall yearly cost of homeownership is quite high by historical standards.

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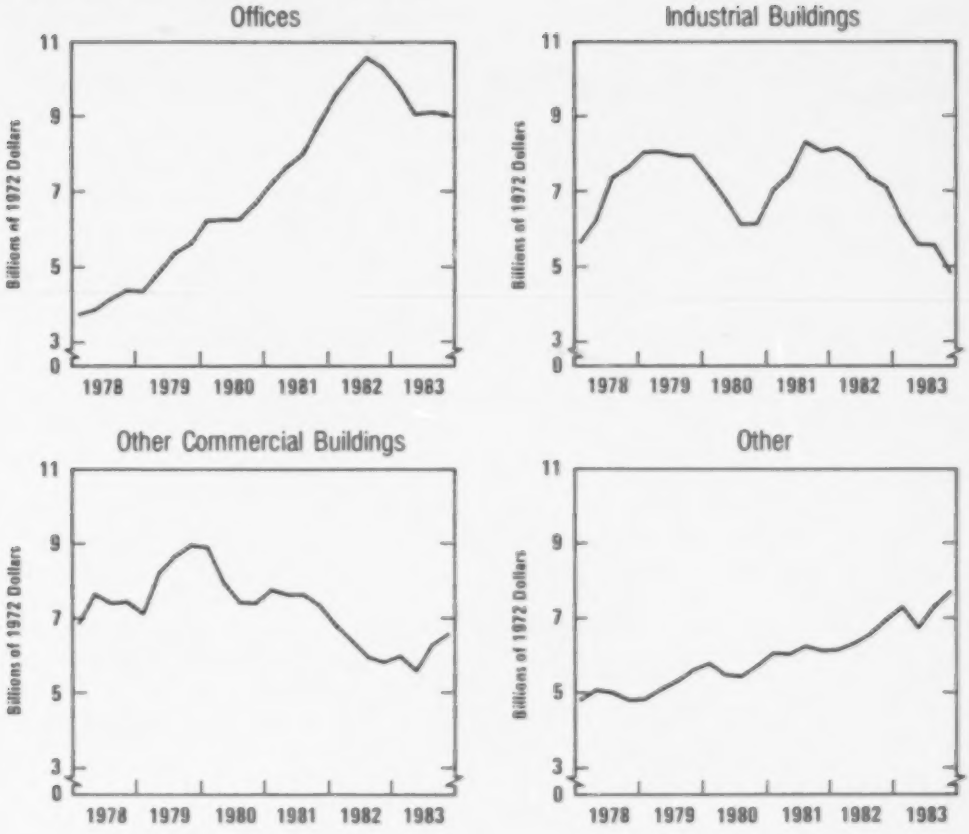
Figure II-12.

Business Structures Investment



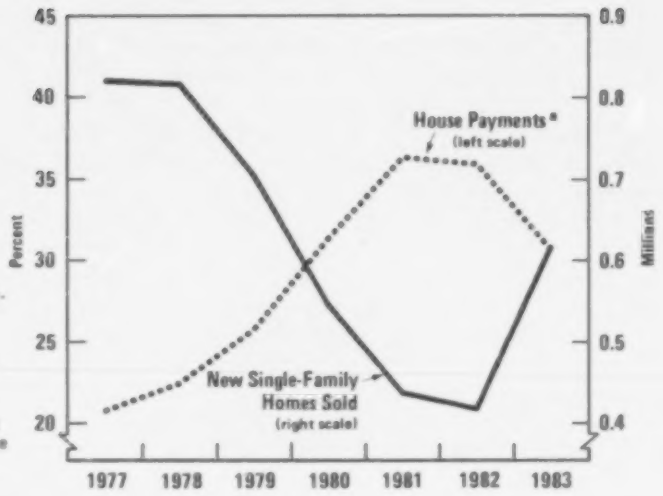
SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis.

- Buyers still experience severe liquidity problems since the monthly cost of mortgage payments continues to be very high relative to household income (see Figure II-13).

- Lower rates of household formation in the future should restrain demand.

Figure II-13.

House Payments and Houses Sold



SOURCES: U.S. Department of Commerce, Bureaus of the Census and of Economic Analysis; National Association of Realtors.

NOTE: 1983 values are for first 11 months.

[a]House payments, based on current mortgage rates and average price of houses sold, as percent of median family income.

Interest Rates and Capital Costs

Business investment has rebounded faster than in past business cycles--a fact that has surprised many observers, given the levels of interest rates. But high interest rates may be at least partially offset by other factors, such as reductions in the relative prices of capital goods, or more liberal tax provisions such as those of the Economic Recovery Tax Act of 1981 (ERTA) as modified by the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA). Similarly, the cost to a family investing in a home depends not only on mortgage interest rates but on property tax rates, the rate at which the house depreciates, and the marginal individual income tax rate, since these determine the value of mortgage-interest and property-tax deductions for income-tax purposes.

User Costs. The combined effects of taxes, interest rates, and other relevant factors on the cost of investment are summarized in a measure known as the user cost of capital. The relative sizes of the changes in the user costs for different assets that occur in response to a given change in interest rates gives a partial answer to the question of how much different types of investment are affected by interest-rate changes. The answer is

only partial because it does not give the response of each category of investment to a given percentage increase in its user cost--only the increase in cost for a given percentage increase in real interest rates. While in the long run the percentage responses in different categories may be about the same, in the short run they may be quite different. The explanation of observed patterns of investment is further complicated by the fact that investment also responds strongly to expectations of future sales, and these may behave differently for different categories of investment.

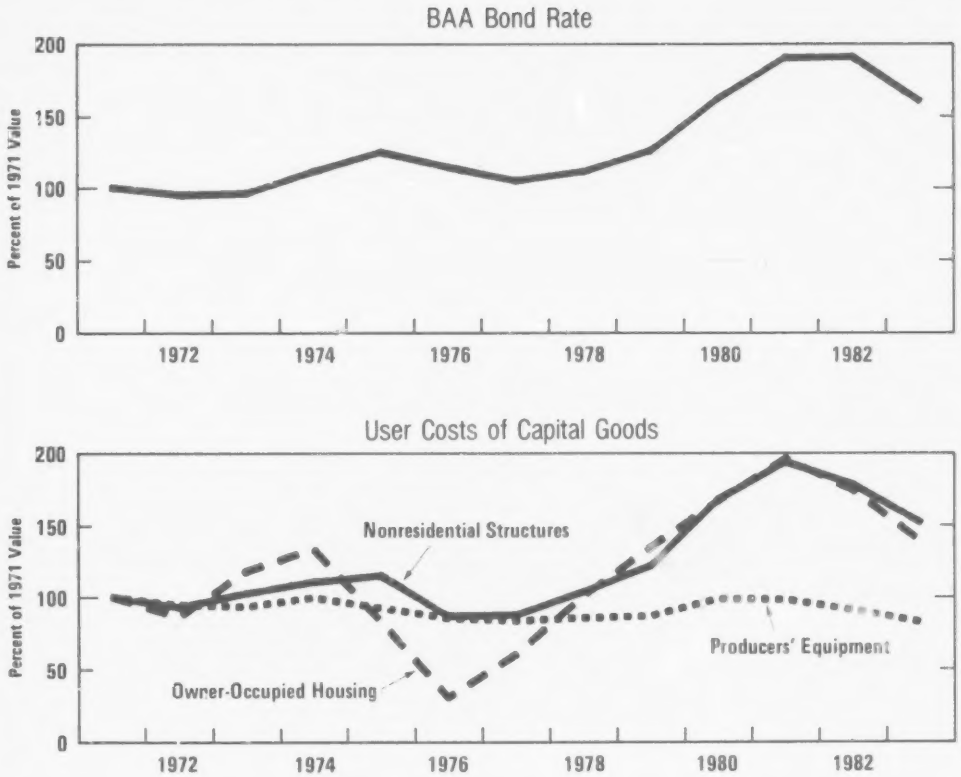
Figure II-14 shows the behavior since 1971 of the user costs for producers' durable equipment, nonresidential structures, and owner-occupied housing, together with that of one of the underlying nominal interest rates, as percentages of their 1971 levels. 6/ The costs for both nonresidential structures and owner-occupied housing have broadly followed movements in the interest rate. In particular, like interest rates, these user costs reached peak levels by recent historical standards in 1981, and they remain at high levels despite having declined since then. By contrast, the user cost for equipment has been affected only slightly by movements in interest rates. It rose very little despite the sharp rise in interest rates in 1978-1981, and has since declined to a relatively low level by historical standards.

What accounts for the differences in the behavior of the user cost measures for different types of investment? In particular, why did the 1978-1981 rise in interest rates cause a sharp rise in the user costs for houses and

---

6/ The formula underlying the user cost calculations is the conventional expression put forward by Robert Hall and Dale Jorgenson in "Tax Policy and Investment Behavior," American Economic Review, vol. 57 (June 1967), pp. 391-414. The present value of the streams of depreciation deductions are computed using an after-tax nominal interest rate (incorporating a weighted-average tax rate), but estimates of the real interest rate are used everywhere else. The real interest rate measures are inflation-adjusted versions of Moody's BAA-rated corporate bond rate for producers' equipment and structures and the effective rate on conventional mortgages for owner-occupied housing. In each case the adjustment for inflation is carried out using the average forecast for inflation in the GNP deflator of an optimal forecasting equation based on the past values of the GNP deflator alone. This equation is estimated as a one-year forecasting equation, but it is transformed to produce forecasts over horizons corresponding to the useful lives of the assets in question using a procedure described in Franco Modigliani and Robert Shiller, "Inflation, Rational Expectations, and the Term Structure of Interest Rates," Economica, vol. XL (February 1973), pp. 12-43.

Figure II-14.
Measures of Capital Costs



SOURCE: Moody's Investors' Service; Congressional Budget Office.

nonresidential structures--apparently overwhelming the effects of the 1981 business tax cut--but have little impact on the cost for equipment?

The explanation has several parts:

- The user costs for structures and housing are far more sensitive to changes in interest rates than is that for equipment;
- The ERTA/TEFRA tax cuts had a stronger impact on the user cost for equipment than on that for structures, and a negative effect on that for owner-occupied housing;

TABLE II-2. RECESSION AND RECOVERY: CHANGES IN THE COMPONENTS OF REAL GROSS NATIONAL PRODUCT
(In billions of 1972 dollars, at annual rates)

	Recession (1981:3 to 1982:4)	Recovery (1982:4 to 1983:4)	1982:4 to 1983:2	1983:2 to 1983:4
Gross National Product	-45.1	89.8	44.4	45.4
Inventory Change	-38.8	30.2	17.3	12.9
Final Sales	-6.3	59.6	27.1	32.5
Consumption	16.6	52.6	31.0	21.6
Business equipment	-15.2	19.8	6.4	13.4
Business structures	-1.3	-1.4	-3.9	2.5
Residential	-2.5	15.5	12.0	3.5
Defense	7.0	4.2	2.8	1.4
Federal nondefense	5.6	-11.8	-9.6	-2.2
Excluding CCC	-1.3	0.8	0.8	0.0
State and local	0.2	1.1	-0.7	1.8
Net exports	-16.8	-20.5	-10.7	-9.8
Exports	-22.5	5.0	-0.3	5.3
Imports	-5.6	25.5	10.4	15.1
MEMO:				
Inventory Change Plus CCC Purchases a/	-31.9	17.6	6.9	10.7
Final Sales Excluding CCC Purchases	-13.2	72.2	37.5	34.7

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis.

a/ Commodity Credit Corporation (CCC) purchases of stocks of farm products are treated conventionally in the National Income and Product Accounts as a component of federal nondefense purchases and of final sales, although they are in many ways similar to inventory-building by farmers.

- The user cost for equipment has been held down by the slow growth in prices of producers' equipment over the past several years relative to the prices of producers' structures and prices in general.

The user cost for equipment is less sensitive to interest rates because interest is a smaller fraction of its total. Real depreciation, the percentage by which the asset wears out in a year's time, accounts for much of the remaining cost, and depreciation rates are much higher for equipment. Thus a given increase in interest costs represents a smaller percentage change in the overall user cost of equipment.

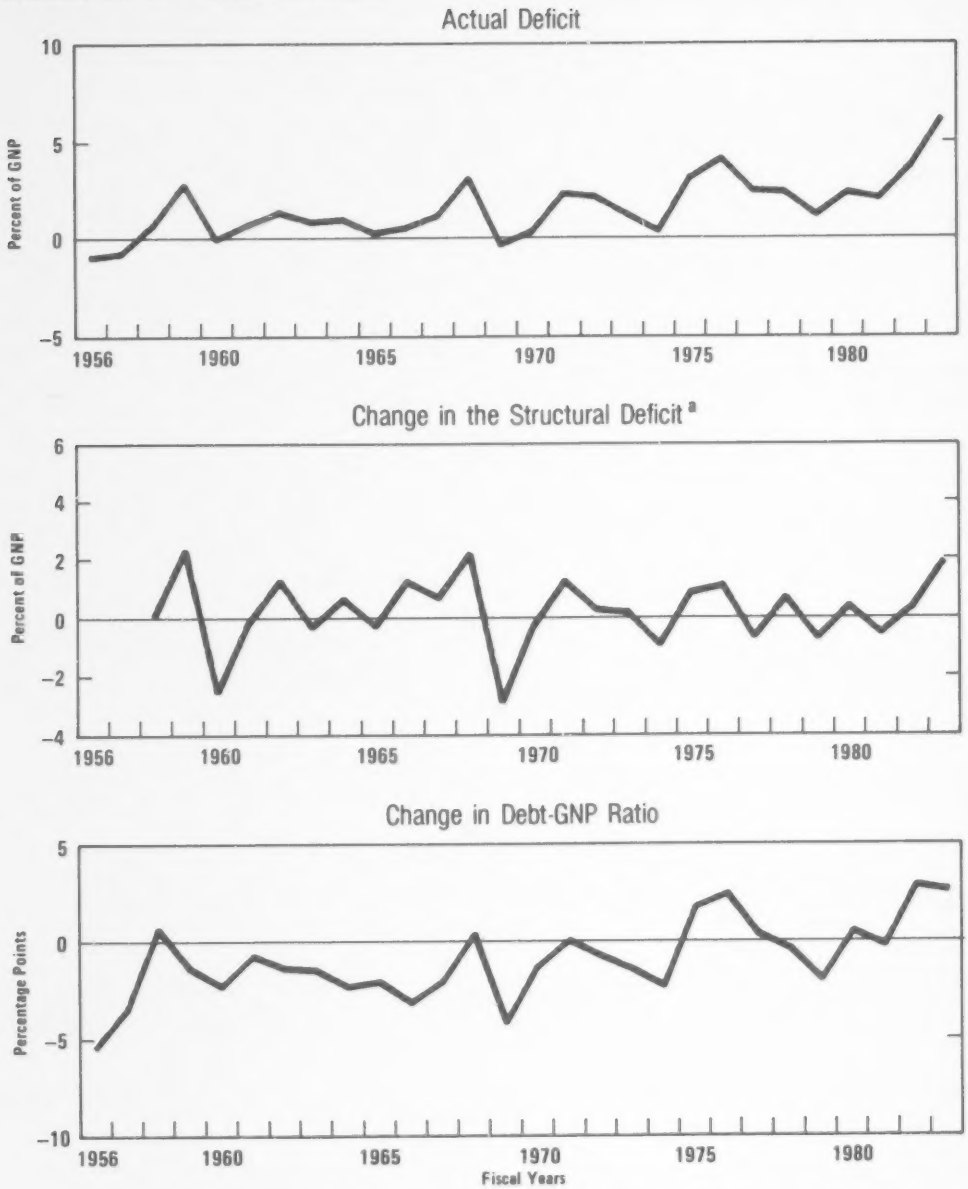
The ERTA/TEFRA business tax cuts worked to hold down the user costs of both equipment and structures. Their impact was proportionally smaller for structures, however, in part because of the directly offsetting effect of the sharp 1981 rise in nominal interest rates. The tax cut was designed to reduce user costs through increases in the "discounted" value of tax allowances for depreciation. Interest-rate increases, however, have an offsetting downward impact on this discounted value, and this offset is proportionally larger for structures than for equipment. The personal tax provisions of ERTA/TEFRA acted to increase the user cost of owner-occupied housing.

The user cost figures help explain why business fixed investment has not been weakened by high interest rates. The strength of investment has been concentrated in producers' equipment, where the level of rates has been more than neutralized by falling relative prices of the capital goods themselves, tax changes, and other factors. Investment in industrial structures, by contrast, has been quite weak during the recovery, possibly because the relevant user cost more fully reflects current levels of interest rates. The rate of growth of housing investment has been relatively strong despite the high level of its user cost, in part because of demographic factors that are not expected to continue. In any case, housing still absorbs a lower share of GNP than would be expected at this stage of the business cycle.

Crowding Out. To the extent that interest rates have been raised by the budget deficit, investment in structures and in housing may have been crowded out, though the main burden of crowding out thus far has fallen on export and import-competing industries. If the deficit causes real interest rates to rise in the future, nonresidential structures and housing may be more likely to be crowded out even without further tax changes or capital goods price developments that favor equipment. Again, this is because their user costs rise more sharply in response to an increase in interest rates than does that of equipment.

Figure II-15

Measures of Fiscal Stimulus



SOURCES: U.S. Department of Commerce, Bureau of Economic Analysis; Congressional Budget Office; Federal Reserve Board.

[a] For a detailed description of the structural deficit, see Appendix B.

FISCAL AND MONETARY POLICY

Fiscal and monetary policies pulled in different directions during the recovery, with the fiscal policy strongly expansive and monetary policy exerting restraint, especially recently. The combination led to much higher interest rates than usual during the recovery, though as already noted the impact on domestic spending of these high rates has been partially offset by other factors. CBO projects fiscal policy to be continually more expansive, under baseline policy assumptions, even as the economy grows (see Chapter III). Given the expressed desire of the Federal Reserve to maintain a monetary policy aimed at holding down inflation, this points to further clashes between monetary and fiscal policy in future years, unless action is taken to reduce the deficit.

Fiscal Policy

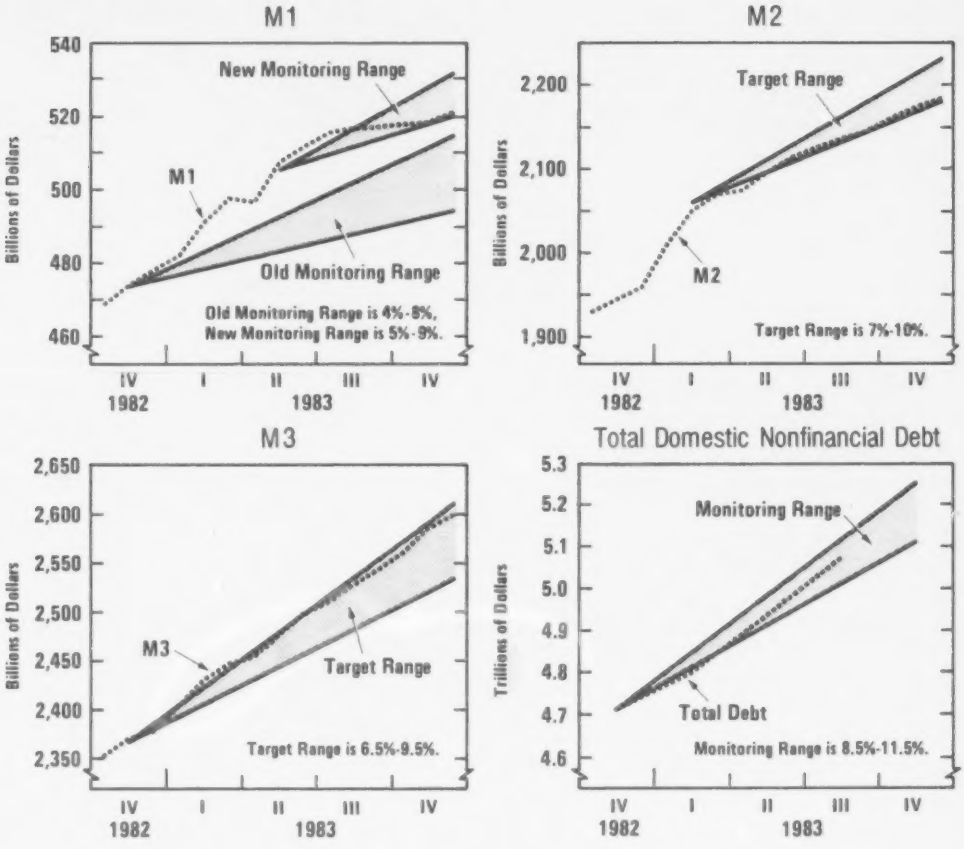
The federal budget has provided strong support to the economy since 1981 (see Figure II-15). The federal deficit increased by about $140 billion, bringing it from 2 percent of GNP in fiscal year 1981 to 6 percent in 1983. Much of the increase was due to the recession, which raised demands on federal resources for income maintenance at the same time that it cut tax revenues. But even after allowing for these factors, there has been a substantial shift of fiscal policy toward stimulation. The major changes in the last few years--a 23 percent cut in tax rates for individuals since 1981, liberalized depreciation allowances and tax credits granted to business in ERTA/TEFRA, the increase in defense spending--have all tended to increase the deficit, and have only partly been offset by cuts in spending. This made fiscal policy much more stimulative during the past recession than in most post-war recessions. Moreover, as Chapter III makes clear, the budget under current policies will become more and more stimulative over the next five years, clearly surpassing the fiscal expansion of the Vietnam war period.

Monetary Policy

Monetary policy, by contrast, has been quite restrictive over the 1981-1983 period. A partial relaxation in 1982 played a major role in bringing about the recovery, but Federal Reserve actions since then appear to have moved back toward restraint.

Recent Monetary Developments. During the 1970s and 1980s, and especially since late 1979, the Federal Reserve has sought with mixed success to keep growth in various money and debt aggregates within preannounced target ranges. In 1983, M3 and total domestic nonfinancial debt grew smoothly at moderate rates within the guidelines, but M1 and M2 behaved much more erratically (see Figure II-16). M1 grew strongly enough at the beginning of the year (17.2 percent at an annual rate from December

Figure II-16.
Monetary Growth and Targets in 1983



SOURCE: Federal Reserve Board.

to March) that the Federal Reserve abandoned its targets, establishing a higher target range beginning in July. M2 growth was also very strong at the beginning of the year (24.5 percent between December and March at an annual rate). Later in 1983, however, both M1 and M2 slowed down. M2 continued growing at a moderate 7.5 percent annual rate for the balance of the year, keeping it within its target range, but M1 stopped growing entirely and fell to the bottom of its revised guidelines.

This volatility in money growth rates was caused partly by unusual developments such as the introduction and inclusion in the money supply of new interest-bearing deposits at financial institutions. 7/ Because of these factors, the Federal Reserve last February reduced the importance of its growth guidelines for the narrowest monetary aggregate, M1, from formal targets to a "monitoring" range, and began placing greater emphasis on M2 and M3, the broader aggregates. The central bank also accommodated most of the strong M1 and M2 growth early in the year by moving in July to raise the M1 targets, and by deciding in February to base its M2 targets for the year on that aggregate's average level during February and March (instead of in the fourth quarter of the previous year, as had been its custom).

Interpreting Monetary Developments. The introduction of new deposits makes the economic impact of monetary policy difficult to discern. The picture is obscured further by the different growth paths of the broader monetary aggregates on the one hand and of M1 on the other.

Many analysts have based their judgments on the uninterrupted growth in M2 and M3 during 1983, inferring that monetary policy has avoided restriction. Over the years, however, M1 growth has probably been more important to the economy because this aggregate, which consists of cash in circulation, travelers' checks, and all checkable deposits at financial intermediaries, most closely reflects balances held for transactions purposes. M2 and M3 are both broader measures consisting of M1 plus successively larger numbers of interest-bearing accounts and liquid financial assets that mainly serve as financial investments rather than as media of exchange. Since many economists believe that transactions uses are the most important aspect of a monetary asset for purposes of analyzing its economic effects, M1 may reflect more accurately the degree of stimulation or restraint that Federal Reserve policy is imparting to the economy. By contrast, to the extent that M2 and M3 growth differ from that of M1, they may do so because they contain elements that respond to changes in GNP behavior rather than helping to cause such changes.

Ordinarily, this perspective would make monetary policy late in 1983 look quite restrictive. It is difficult to judge the degree of restraint implied by that period's M1 behavior precisely, however, because the way in which M1 interacts with the broader economy has recently become quite unpredictable because of the effects of financial deregulation. To the extent that funds that represent savings (rather than transactions) balances

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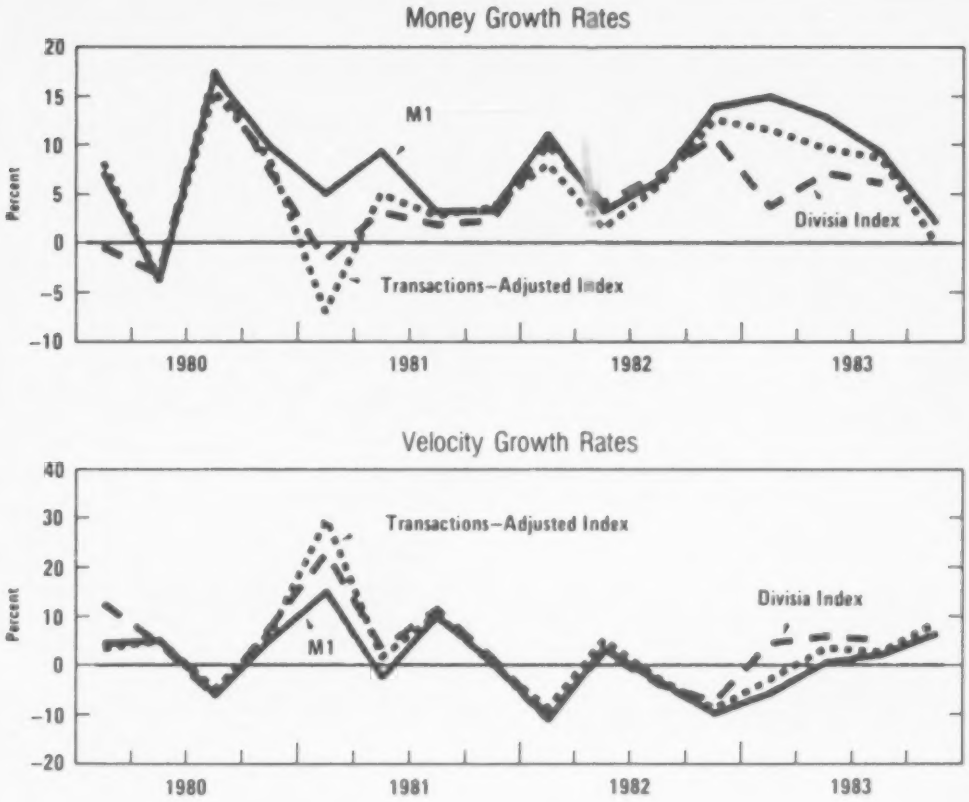
7/ The new deposits were Money-Market Deposit Accounts (MMDAs), which were introduced in December and included in M2 and M3; and super-NOW accounts, introduced in January and included in all the aggregates.

Figure II-17.

Recent Money and Velocity Growth Rates



SOURCE: Congressional Budget Office.
NOTE: One quarter growth at seasonally adjusted annual rates.

flowed into and out of new accounts as consumers adjusted to their availability, the behavior of M1 may have been affected in ways that have little to do with the overall thrust of monetary policy.

Alternative Monetary Measures. The Federal Reserve has developed evidence on the economic importance of these factors during 1983. Two measures have been developed to reflect the underlying growth in the transactions and other purely monetary services yielded by the money supply, as opposed to the financial asset function provided by some newly authorized money-supply components (see the box). As Figure II-17 shows,

MONETARY INDEX NUMBERS

Financial deregulation has raised questions about the usefulness of the monetary aggregates in short-term economic policy. Earlier, when the narrow aggregates were composed entirely of balances used for transactions, they exhibited a stable relationship to nominal GNP over a period of a few years that was useful to policymakers. Now, however, the aggregates are composed of heterogeneous groups of assets, each offering a different combination of "asset" services as a producer of interest income on the one hand and "monetary" services--primarily serving as a means of exchange in purchases--on the other. As a result, the short-term relationship of the published aggregates to economic activity seems to have been distorted during periods of adjustment to changes in financial regulations.

Two experimental new statistics have been developed in an attempt to measure just the monetary services yielded by the monetary aggregates. One approach, the Divisia Monetary Aggregate, uses an indirect measure of the "moneyness" of each money-supply component: the amount of interest per dollar that people are willing to forgo in order to hold the assets in that component. A second approach, the Transactions-Adjusted Money Index, is more direct: it substitutes for the forgone interest measure an estimate of the number of times per month that each dollar in a given component is used in making a purchase.

Each estimate weights the different components by the corresponding measures of "moneyness" and then combines them into a measure of total monetary services. This total is expressed as a ratio to its level in a base year to facilitate interpretation. */ The results are analogous to other economic statistics, such as the Commerce Department's real GNP measure, in that they provide a means of aggregating diverse elements into a composite measure conveying important economic information.

As Figure II-17 shows, the new index numbers behave quite differently from conventional monetary aggregates during periods when the economy is adjusting to the availability of new liquid financial assets, as in 1981 and 1983. Since preliminary evidence suggests that the index numbers may be satisfactory measures of total monetary services, the behavior of the conventional aggregates should be interpreted cautiously during periods of deregulation.

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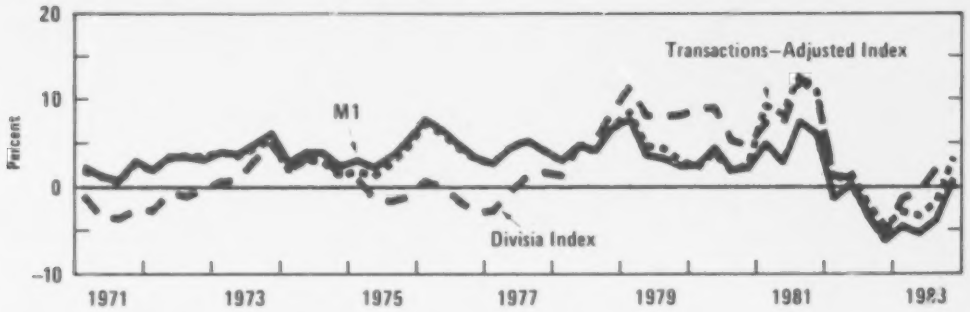
*/ For a more detailed description of the measures and evidence on their performance, see William A. Barnett and Paul A. Spindt, "Divisia Monetary Aggregates," Board of Governors of the Federal Reserve System, Staff Study 116 (May 1982); and Paul A. Spindt, "Money Is What Money Does: A Revealed Production Approach to Monetary Aggregation," Board of Governors of the Federal Reserve System, Special Studies Paper 177 (June 1983).

Figure II-18.
Velocity Growth Rates Since 1971



SOURCE: Congressional Budget Office.
NOTE: Percent growth from a year earlier.

these two measures, the Divisia Monetary Index and the Transactions-Adjusted Money Index, both grew significantly more slowly than did M1 during 1983, just as they had in 1981 when NOW accounts were first introduced on a nationwide scale. Thus nontransactions uses may have contributed much to overall M1 growth earlier in the year. The fact that the growth rates of the three monetary measures seemed to be converging late in the year suggests, however, that these developments may be playing themselves out, and may be less important in the future. In any case, the implication that the growth in transactions balances slowed throughout 1983 suggests that monetary policy may have tightened during this period and raised real interest rates, though it remained less restrictive than in 1981-1982.

Velocity Growth. The restrictive impact of the recent weakness in M1 growth has been offset slightly by the fact that money holders have apparently been reducing the size of the transaction balances they wish to keep relative to every dollar of purchases. This development is reflected in the recent growth of the "velocity" of most measures of transactions balances shown in the bottom panel of Figure II-17. (The velocity of a given measure of the money stock is the ratio of GNP to that money stock.) Velocity has been highly unpredictable during much of the past three years, seeming to depart from the regularities that had characterized its behavior in the past. In particular, as Figure II-18 shows, the four-quarter changes in velocity of M1 as well as of the two special monetary indexes described above were negative from mid-1982 until early 1983, a development that, for two of these measures, is almost without precedent in the postwar period.

Economists are only beginning to understand the recent behavior of velocity, but there may be grounds for expecting it to behave more normally in the foreseeable future.

Many analysts believe that the increases in short-term interest rates that have occurred since May of last year are a sign that the supply of transactions balances has grown too slowly to accommodate the demand even after the growth in velocity is accounted for, and that monetary policy has had a restrictive impact as a result. Increases in short rates do not always imply such failure to accommodate. On the contrary, during periods in the recent past in which the Federal Reserve has attempted to hold M1 growth to its target ranges, increases in short rates have often occurred during periods in which money growth has been relatively strong, because market participants raised short rates in anticipation of temporary efforts by the central bank to bring money growth back within its target range. This does not seem to be the case currently, however, largely because money growth is not above its target range, and because the targets are not currently being strictly enforced.

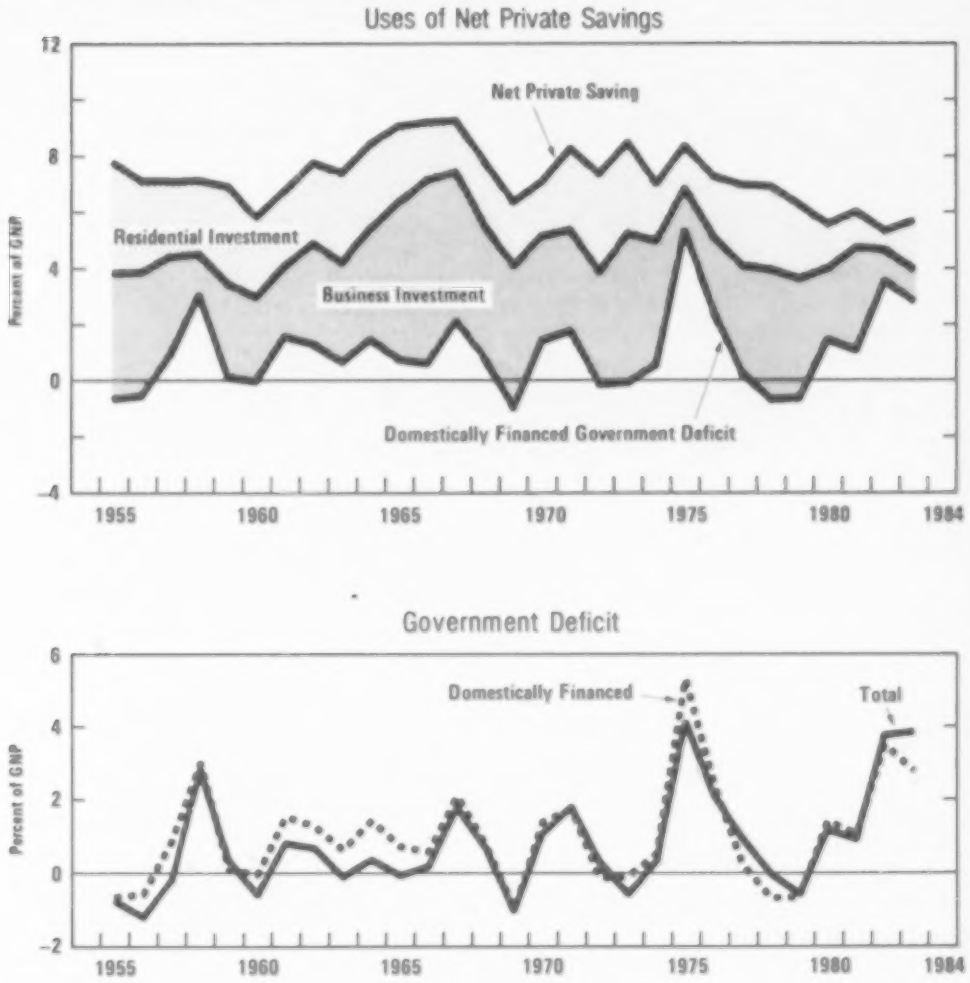
The Outlook for Monetary Policy. Last July, the Federal Reserve announced tentative target and monitoring ranges for money and debt growth in 1984 of 4 to 8 percent for M1, 6½ to 9½ percent for M2, 6 to 9 percent for M3, and 8 to 11 percent for total domestic nonfinancial debt. The final targets are expected to be established in early February. If the February announcement confirms the tentative targets, the outlook will be for a continuation of relatively restrictive policy shaped by a desire to avoid a reacceleration of inflation. Further evidence that this is likely to be the case is provided by Federal Reserve Chairman Paul Volcker's recent speeches.

The restrictive impact of the central bank's policy over the longer 1982-1984 period will be accentuated if the 1984 targets are based on the actual levels of the aggregates during the final quarter of 1983, as most analysts expect. This is because two of the aggregates were at a relatively low level in late 1983 (ignoring increases that reflected responses to deregulation alone).

CBO's forecast assumes that money growth rates will be held close to the midpoints of their target or monitoring ranges during the remainder of 1984 and 1985. However, should fluctuations in the behavior of the demand for transactions balances be discerned, CBO assumes that the Federal Reserve will accommodate them, allowing money growth to fluctuate. This policy is expected to result in relatively stable interest-rate paths, although there is a risk that variations in money growth needed to offset shifts in velocity might change longer-term rates by causing shifts in inflation expectations.

Figure II-19.

Private Saving, Investment, and the Deficit



SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis.

NOTE: The domestically financed government deficit is the combined deficit of federal, state, and local governments, less net capital inflows (measured by NIPA accounts).

In any case, the recent volatility in the behavior of M1 is expected to subside during the projection period. The fact, noted above, that the growth rate of M1 has recently been moving toward those of the special monetary indexes described earlier suggests that the distortions introduced by financial deregulation may be ending. As regards the velocity of transactions balances, moreover, many analysts attribute its recent period of negative growth to delayed reactions to the relatively large recent declines in interest and inflation rates. The size of these reactions may have been increased by financial deregulation, which may have made M1 balances more sensitive to changes in interest and inflation rates. Since future changes in interest and inflation are expected to be more gradual the prospects for a return to less volatile velocity behavior seem good.

FINANCING THE FEDERAL DEFICIT

The federal deficit has increased in the past two years by about $140 billion. How has the increase been financed? The answer depends on what happened to flows of investment and saving elsewhere in the economy, rather than on who actually bought the new Treasury securities. In recent years, funds from abroad have directly and indirectly financed much of the increase in government debt. This continued through the first year of recovery from the recession. The financing was made easier by the relatively modest credit demands of the business sector (see Figure II-19). Moreover, state and local governments have begun to run sizable surpluses as conditions improve. Household saving has not contributed much, perhaps because the increase in wealth as stock and bond prices rose has partly substituted for additional household saving.

Net Foreign Investment

In the past few years, the United States has gone from being a supplier of capital to the rest of the world to being a net borrower. The shift has come about through increased purchases of U.S. liabilities by foreigners as well as a reduction in U.S. investment overseas. The small capital outflow of calendar year 1981 has been replaced by a capital inflow of 1.7 percent of GNP in the fourth quarter of 1983. At the same time, the federal deficit has gone from 2 percent to 6.0 percent of GNP. Thus nearly half of the increase in the federal deficit is, in effect, being indirectly financed from overseas. (For more discussion of the foreign sector, see Chapter IV.)

State and Local Governments

Although not all states are in good fiscal shape, the operating balances of state and local governments have improved substantially during the

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recovery and could offset part of the increased federal demand for credit. In the fourth quarter of 1982, the state and local sector posted a $1.2 billion operating deficit. This changed to an operating surplus of $18.7 billion for the fourth quarter of 1983.

An improvement in state and local budget balances generally occurs during economic recoveries, but the recent improvement has far exceeded that observed early in previous recoveries. The major reason for the difference has been a slower growth in spending, because of measures taken in response to the fiscal strains of the recession. The growth of revenues has approximated that of past recoveries, despite the much slower growth of federal grants-in-aid. A major reason for this is that states and local governments have been willing to raise taxes. The increases in 1983 were the largest on record, perhaps equal to half of the 1983 installment of the federal personal income tax cut.

At current levels, state and local operating balances would offset less than 10 percent of the federal deficit in 1984. However, state and local social insurance trust fund balances are large and likely to grow steadily, so that together with operating balances they could approach 33 percent of the federal deficit in 1984, up from less than 28 percent in 1983.

The Household Sector

Although over the past three years households have received cuts in federal income taxes now worth about $100 billion at an annual rate, they have not comparably increased their saving. There appear to be at least three reasons for this:

- Increases in other taxes, particularly Social Security taxes, have offset some of the personal income tax cut;
- Durable goods purchases, and saving by businesses, may have substituted for some private saving; and
- Increases in household wealth have probably led to increased consumption.

About half of the impact of the tax cuts on disposable personal income has been offset by increases in state and local taxes, by increases in Social Security contributions, and by bracket creep. Average federal taxes will be pushed up in 1985 by additional Social Security contributions. Marginal tax rates on saving have fallen, although apparently not by enough to offset in the short run the other factors that tend to reduce saving.

The national income accounts (NIA) include only income generated by current output. Thus reported personal income does not include all the items that most people think of as income. The most important exclusion is capital gains, either on financial investments or on investment in physical assets such as housing. Prices of all financial assets--bonds, stocks, and mortgages--have increased rapidly since the summer of 1982, reflecting both lower interest rates and the improved financial situation of corporations as a result of the tax law changes. These capital gains have the net effect of encouraging consumption, and would thus show up in the accounts as a decrease in personal saving. 8/ Since the increase in assets is not immediately consumed, economic saving goes up when assets accumulate, though saving out of income on an NIA basis goes down.

Interest rates are not expected to decline by very much in the near future, so the large capital gains that have recently pushed up household net worth will probably not be repeated. Thus it seems likely that the household sector will be an increasing source of saving in the next few years. 9/

The Corporate Sector

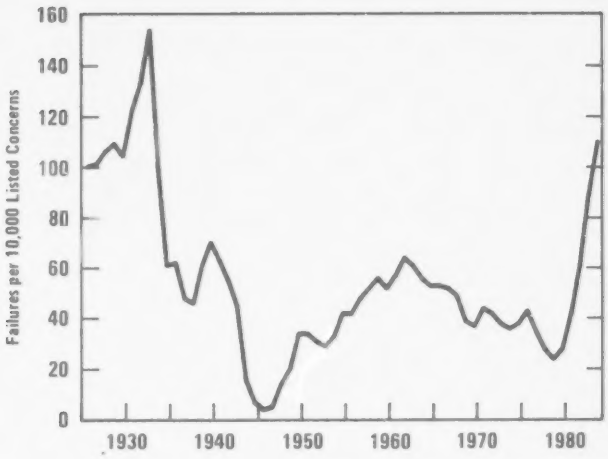
So far in the recovery, corporate credit demands have been modest. There are two basic reasons for this: corporate cash flow has been better than in previous recoveries; and corporations have not yet begun to make long-term investments, which require heavy financing.

8/ Some analysts suggest that the personal saving reported by the Commerce Department, on which this discussion is based, is not the most useful measure of saving. An alternative measure of saving is available, derived by adding up all the known household transactions in financial and physical assets. This alternative measure, constructed by the Federal Reserve Board, shows after allowance for differences in definitions about $68 billion more household saving in the third quarter of 1983 than the Commerce Department measure--down from about $130 billion in the third quarter of 1982. However, the FRB calculation is subject to a large error. Skepticism about the Federal Reserve measure is supported by a large, partially offsetting, discrepancy in the corporate sector accounts. It seems likely that at least part of the difference is the result of difficulty in correctly assigning financial transactions to the household or corporate sectors.

9/ Some analysts believe that state and local employees treat a part of state and local pension funds as part of their assets. To this extent, increases in state and local trust fund surpluses may tend to reduce their saving.

Figure II-20.

Business Failure Rate



SOURCE: Dun & Bradstreet.

The recent recession increased bankruptcies to rates that have not been seen since the Depression (see Figure II-20), and forced many surviving businesses to trim costs sharply. But corporate cash flow has held up relatively well, largely because of the 1981 tax act--even when modified a year later by the 1982 tax act. In 1983, accelerated depreciation allowances and increased tax credits in the new tax law reduced corporate taxes by about $11 billion (NIA basis) below what they would have been under pre-1981 law. 10/ This relatively good cash flow has meant that businesses have not had to raise as much cash from outside sources as usual in recovery periods.

As the recovery proceeds and business investment increases, business demands for cash will presumably begin to exceed what can be easily financed internally. Many analysts therefore expect business loan demand to increase faster than fixed investment.

CONCLUSION

Large deficits, along with the moderate easing of monetary policy in the summer of 1982, have helped to lift the economy out of the recession.

10/ The increase in corporate saving resulting from the tax law change is presumably somewhat smaller than this amount, since dividends may have been increased.

At the same time, the deficits may have contributed to high real interest rates. To a large extent the deficit has been financed by inflows of capital from abroad. Worsening net exports, the counterpart of the capital inflows, have partly offset the fiscal stimulus from the deficit, and at the same time imposed a disproportionate share of the burden of financing the deficit on exporting industries and import-competing industries.

What if the capital inflow does not keep pace with the federal deficit, or stops altogether? An increasing proportion of the deficit will then have to be financed either through increased saving or at the expense of private domestic spending. Should the Federal Reserve try to accommodate by allowing greater money growth, the result might be increased inflation. If, on the other hand, it adhered to a relatively tight money policy, interest rates would rise, further distorting interest-sensitive sectors of domestic spending and impeding growth. But continued foreign financing of the deficit also carries significant costs: these are discussed in Chapter IV.

CHAPTER III. THE OUTLOOK FOR FISCAL POLICY

The persistence of very large federal deficits continues to be a major fiscal policy issue. Projections show them rising dramatically every year throughout the rest of the decade, even if the economic expansion remains vigorous. This chapter presents CBO's budget outlook, assesses the relationship between federal deficits and interest rates, examines alternative long-run policies toward deficits, and discusses ways to reduce them.

THE BUDGET OUTLOOK UNDER CURRENT POLICIES

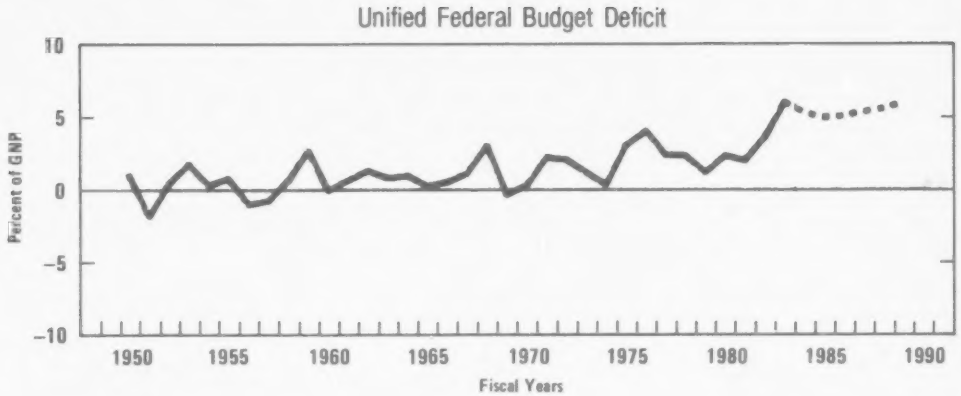
CBO estimates that current tax and spending policies will produce deficits rising from $190 billion in 1984 and $195 billion in 1985 to $326 billion by 1989 (see Table III-1). Given current budget policies, the deficit is projected to decline to 5.0 percent of GNP by 1985, 1.1 percentage points below the 1983 ratio. The deficit has fallen as a percentage of GNP during the first two years of most postwar recoveries. What is unusual about the current recovery is that the deficit-GNP ratio remains extraordinarily high in spite of a larger-than-average decline. This short-run outlook raises serious questions about the composition of output during the current recovery.

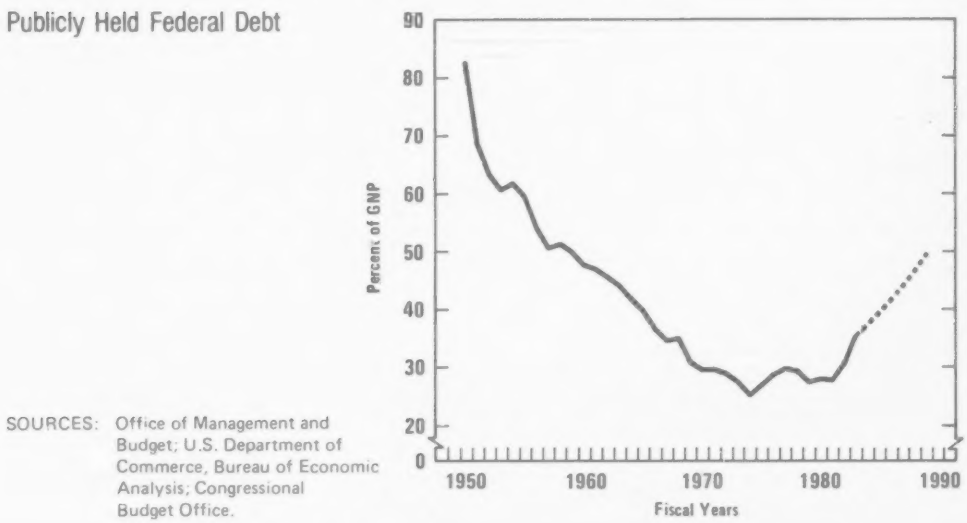
CBO is now projecting a long-run increase of the deficit-GNP ratio to 6.1 percent in 1989--the same as the record set in 1983, when the budget was still being significantly enlarged by the 1981-1982 recession. From 1983 through 1989, the average deficit-GNP ratio is 5.5 percent, the largest for a seven-year span since World War II (see Figure III-1). Such an extraordinary string of large deficits would cause the stock of federal debt held by the public to rise rapidly relative to GNP--reaching levels last observed when the nation was working off its World War II accumulation of debt.

Why do the projections show the deficit rising relative to GNP after 1985, in spite of sustained economic expansion? The reason is that total outlays grow much faster than GNP, while total revenues rise only slightly faster than GNP. Within those outlays, net interest payments grow from 3.2 percent to 4.1 percent of GNP, three times as much as the decline in the ratio of entitlement spending to GNP. Defense outlays grow from 6.7 percent to 7.8 percent of GNP, by nearly three times as much as the fall in

Figure III-1.

Federal Debt and Deficits





SOURCES: Office of Management and Budget; U.S. Department of Commerce, Bureau of Economic Analysis; Congressional Budget Office.

the ratio of nondefense discretionary spending to GNP. On the revenue side, a combined increase in personal income and payroll taxes from 15.3 percent to 16.0 percent of GNP is nearly offset by declines in all other revenue sources relative to GNP.

All such projections are sensitive to their underlying economic assumptions. CBO is assuming that the economy will grow during 1983-1989 at a rate equal to the average real growth during the first seven years

TABLE III-1. THE BUDGET OUTLOOK UNDER CURRENT POLICIES
(By fiscal year, on a unified budget basis)

	1983	1984	1985	1986	1987	1988	1989
In Billions of Dollars							
Budget Deficit	195	190	195	217	248	282	326
Revenue	601	663	733	795	863	945	1016
Outlays	796	853	928	1012	1112	1227	1342
Off-Budget Deficit	12	13	13	13	14	13	13
Total Federal Deficit	208	203	208	230	262	295	339
Publicly Held Federal Debt	1142	1327	1534	1763	2024	2318	2656
As a Percentage of GNP							
Budget Deficit	6.1	5.3	5.0	5.1	5.4	5.6	6.1
Revenues	18.6	18.6	18.7	18.7	18.7	19.0	18.9
Outlays a/	24.7	23.9	23.7	23.8	24.1	24.6	24.9
Publicly Held Federal Debt	35.4	37.2	39.2	41.5	43.9	46.5	49.4

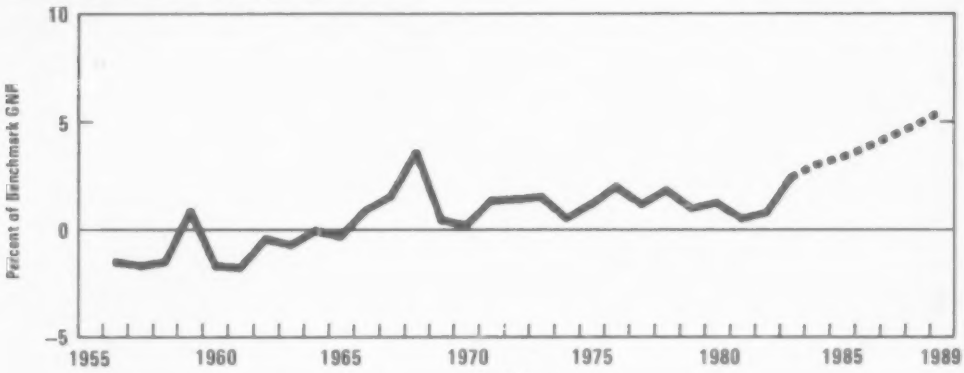
NOTE: Current policies include all legislation enacted since the passage of the 1984 budget resolution, but exclude the recommended revenue and outlay changes that have not yet been achieved. The budget projections are based on the economic projections described in Chapter I.

a/ These projections assume 5 percent growth in real defense authority through 1989. The first budget resolution for 1984 specified a 5 percent real growth path through 1986.

following other economic troughs. If real growth were one percentage point higher during the projection, with unchanged inflation and interest rates, the 1989 deficit would be reduced by $124 billion. 1/ But even with six years of

1/ This sensitivity of the projected deficit to a one-percentage-point higher rate of growth does not take into account changes in interest rates, inflation, and other factors that also would have an impact on the deficit. The CBO estimates based on the "high-growth path" economic projections take account of these other factors. See Congressional Budget Office, Baseline Budget Projections for Fiscal Years 1985-1989 (February 1984), Chapter IV.

Figure III-2.
Standardized-Employment Deficit



SOURCE: Congressional Budget Office.

record growth, the deficit under current budget policies would still remain above $200 billion, or over 3.5 percent of GNP.

The Structural Budget Deficit

A large part of the current deficit is a result of the business cycle. On the upswing, this cyclical component of the deficit will decline. But CBO estimates that the noncyclical, "structural" component will rise sharply under current budget policies. 2/

The noncyclical growth in the projected deficits can be measured by the standardized-employment deficit, the difference between revenues and outlays that would be obtained if the economy were performing at a benchmark level of output consistent with 6 percent unemployment. At that benchmark, revenues would be higher because personal income and corporate profits would be higher, and transfer payments would be lower because there would be fewer people unemployed.

2/ The meaning and measurement of the structural deficit and related fiscal policy concepts used in this chapter are discussed in Appendix B.

TABLE III-2. STANDARDIZED-EMPLOYMENT DEFICIT (By fiscal year)

	1983	1984	1985	1986	1987	1988	1989
			Billions of Dollars				
Deficit	85	114	136	167	206	247	299
Revenues	685	723	781	837	899	974	1038
Outlays a/	769	837	917	1003	1105	1221	1337
			Percent of Standardized GNP				
Deficit	2.4	3.0	3.3	3.8	4.3	4.9	5.5
Revenue	19.5	19.2	19.2	19.1	19.0	19.2	19.0
Outlays a/	21.9	22.2	22.5	22.9	23.4	24.0	24.5

Note: These estimates exclude a cyclical adjustment to interest payments that would raise the standardized-employment deficit $18 billion by 1989, because interest rates are assumed to be higher at lower unemployment rates in the model used to calculate this deficit measure.

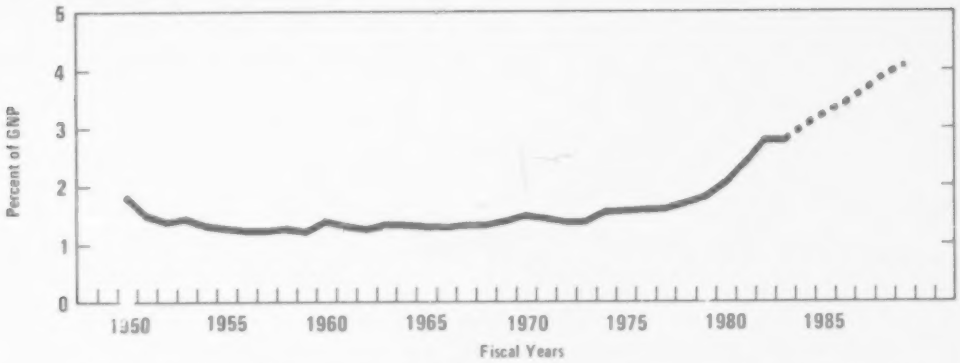
a/ These outlay projections assume 5 percent real growth in defense authority through 1989.

CBO sees the standardized-employment deficit rising from $114 billion in 1984 and $136 billion in 1985 to $299 billion by 1989 (see Table III-2). 3/ In relation to the total output, the standardized-employment deficit climbs from 3.0 percent of the benchmark level of GNP in 1984, and 3.3 percent in 1985, to 5.5 percent by 1989 (see Figure III-2). This rise represents a significant amount of fiscal stimulus, resulting from a greater growth of federal outlays than of revenues after 1985.

3/ The difference between the structural and baseline deficit estimates is small by 1989, because after 6 years of growth, the deficit will be basically structural in nature.

Figure III-3.

Federal Net Interest Payments



SOURCES: Office of Management and Budget; U.S. Department of Commerce, Bureau of Economic Analysis; Congressional Budget Office.

CONSEQUENCES OF LARGE AND PERSISTENT FEDERAL DEFICITS

Deficits of the size and duration projected by CBO under current budget policies have two major consequences. First, they add to interest-rate pressures. These pressures can be mitigated by capital inflows from abroad; but capital inflows, while adding to the pool of capital, raise the value of the dollar, thereby crowding out export industries and industries that compete with imports. Moreover, the commitments to pay interest and dividends to foreigners become a liability against future U.S. standards of living. To the extent that interest rates rise in spite of these inflows, business capital formation will be less than it would be otherwise, lowering future growth in productivity and living standards.

The second major consequence of large and persistent deficits is that the interest bill on the national debt would continue to grow, increasing future deficits and raising the stock of federal debt relative to GNP. 4/ In 1983, federal interest payments amounted to 2.8 percent of GNP, twice the ratio observed a decade earlier (see Figure III-3). CBO's projection finds

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4/ For a discussion of this issue, see Appendix B in this report and also Congressional Budget Office, The Economic and Budget Outlook: An Update (August 1983), p. 70.

them reaching 4.1 percent of GNP by 1989. Simply offsetting the effect of rising interest costs on the deficit-GNP ratio would require either large reductions in other outlays or large increases in revenues.

If interest rates were to increase as a result of the projected rise in the federal debt-GNP ratio, interest payments would climb even faster than projected. (The CBO baseline projections assume that interest rates decline.) For example, a one-percentage-point higher rate of interest throughout the projection period would raise the interest bill by $31 billion, or 0.1 percent of GNP, by 1989. Over time, financing the federal debt could become so burdensome that pressures might be brought to bear on the Federal Reserve to monetize a larger portion of the debt, resulting in faster money growth and increased inflation. 5/

FEDERAL DEFICITS AND INTEREST RATES

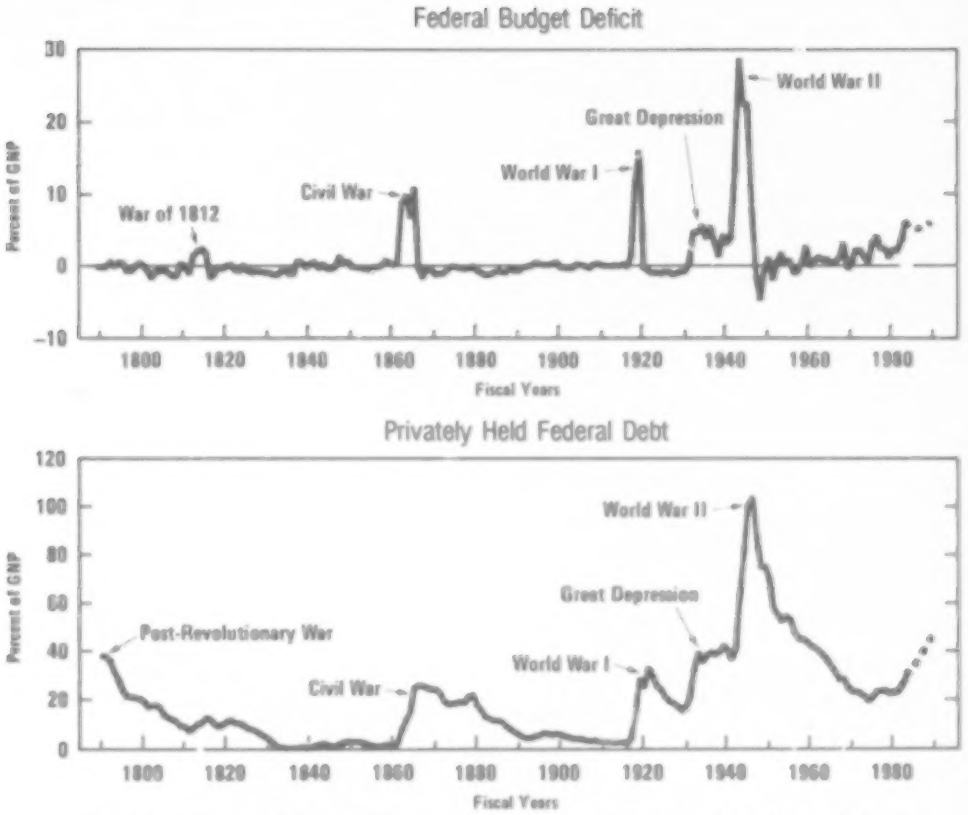
Throughout its history, the United States has periodically run federal deficits. Of the 193 federal budgets, 90 have shown deficits. 6/ Those deficits were mainly temporary, being associated primarily with wars and recessions. The projected deficits, however, are structural in nature, since they do not decline when the economy is expanding. Moreover, they are projected to exceed 5 percent of GNP in coming years, a rate only exceeded during the Civil War, World War I, the Great Depression, and World War II (see Figure III-4). Such large structural deficits imply that the Treasury will have to draw upon private saving to an unusual degree. Specifically, privately held federal debt will have to rise above 30 percent of GNP to finance the projected deficits, something that has occurred only four times in the history of the republic. (The ratio reached 38 percent of GNP in the post-Revolutionary War period, 33 percent in the 1920-1921 recession, 40 percent during the Great Depression, and 104 percent in World War II. These high ratios were temporary, being associated with war and recessionary periods, and afterward they always fell.) The obvious question is what impact a large federal deficit during an economic upswing will have on real interest rates.

5/ See Thomas Sargent and Neil Wallace, "Some Unpleasant Monetarist Arithmetic," Federal Reserve Bank of Minneapolis, Quarterly Review (Fall 1981), pp 1-17.

6/ For an historical perspective on federal deficits as well as a simple discussion of their economic effects, see James R. Barth and Stephen O. Morrell, "A Primer on Budget Deficits," Federal Reserve Bank of Atlanta, Economic Review (August 1982), pp. 6-17.

Figure III-4.

Federal Fiscal History



SOURCE: Congressional Budget Office, from material cited in James R. Barth and Stephen O. Morrell, "A Primer on Budget Deficits," *Economic Review*, Federal Reserve Bank of Atlanta, August 1982, pp. 6-17.

Most economists believe that deficits of the size and duration being projected would raise interest rates and crowd interest-sensitive sectors of the economy out of the capital market. Some, however, disagree with this view and argue that rates of interest need not be affected at all. 7/ The following section reviews the potential relationships between deficits and real interest rates from a theoretical point of view, and then examines the empirical evidence.

Economic Effects of Debt-Financed Deficits

The consensus view is that debt-financed deficits cause real rates of interest to rise. This is considered almost inevitable in a closed economy operating at full employment, to the extent that the level of private saving out of which both federal deficits and private investment must be financed cannot be further increased. The acquisition of additional federal debt must come at the expense of private investment. The federal government induces this substitution by bidding up rates of interest and thus crowding out interest-sensitive private spending. 8/ Since the economy is assumed to be operating at full employment, there will be complete crowding out. This means that the increase in government spending or tax-induced increase in consumption giving rise to the deficit will be completely offset by a decline in interest-sensitive private spending. The debt-financed deficit, in other words, alters the composition of total spending by driving up real rates of interest. The potential losers in such a situation are future generations who, because of the reduced capital formation, will experience lower standards of living than they would otherwise attain.

Similar consequences follow when there is less than full employment, though there need not be complete crowding out. At less than full employment, debt-financed deficits will cause output to expand. The expansion in output, however, will lead to an increase in the demand for money, which typically increases the rate of interest, and interest-sensitive private spending will decline. But this decline will not fully offset the increased deficit because private saving will increase, thereby providing more funds to finance the deficit. Once again, debt-financed federal

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7/ See "Government Deficit Spending and Its Effects on Prices of Financial Assets," Office of the Assistant Secretary for Economic Policy, Office of the Secretary, Department of the Treasury (May 1983).

8/ The effect on interest rates may be cushioned, of course, by state and local budget surpluses and capital inflows.

deficits raise real rates of interest, but unlike the full-employment case they result in only partial crowding out.

Other Views. Not all economists agree that debt-financed federal deficits must increase real interest rates. According to one view, if deficits result from lower taxes they will not induce people to increase consumption. 9/ The reason is that people will realize that the additional federal debt issued to finance the deficits must be serviced by higher future taxes, and will increase their saving to meet this future tax commitment. Since the present value of the future tax liability is simply the deficit if private discount rates equal the rate of interest on public debt, private saving will increase by that amount. In that case, debt-financed deficits will not siphon saving away from private investment; real interest rates will not have to rise to induce people to acquire additional federal debt; and thus crowding out will not occur. Most economists consider this theoretical view excessively abstract and the evidence in its support unconvincing.

A completely different view as to why federal deficits may not affect interest rates is based upon the notion that international capital markets are nearly perfect. Even relatively minor increases in U.S. real interest rates draw in foreign capital, which diminishes the upward pressure on rates. Under flexible exchange rates, this inflow of foreign capital causes the dollar to appreciate and as a result net exports decline. Whatever crowding out occurs is concentrated in net exports rather than in other interest-sensitive private spending. The increased federal deficit is in effect financed by net capital inflows. 10/ This particular view may have had merit when federal deficits were relatively small. They now are so large, however, even relative to the international pool of saving, that as they absorb an increasingly larger portion of international saving they are likely to push up real rates of interest.

Economic Effects of Money-financed Deficits

Federal deficits may also be financed by selling debt to the Federal Reserve rather than the private sector. The Federal Reserve pays for the

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9/ This view is largely based upon the paper by Robert J. Barro, "Are Government Bonds Net Wealth?" in Robert J. Barro, Money, Expectations, and Business Cycles (Academic Press, Inc., 1981), pp. 243-65.

10/ See Robert A. Mundell, "Capital Mobility and Stabilization Policy Under Fixed and Flexible Exchange Rates," Canadian Journal of Economics and Political Science (November 1963), pp. 475-85.

debt with its notes, thus increasing the money supply. It is not required to do this, since it operates independently of the Treasury Department. Nonetheless, there is evidence that the Federal Reserve monetized federal deficits throughout much of the postwar period in an effort to stabilize interest rates. 11/ Given the size of current and prospective deficits, monetizing them might keep interest rates (both real and nominal) from rising for a time, but at the cost of significantly higher inflation which pushes nominal interest rates upward. The central bank's current policy seems to rule out monetizing deficits. But if large and persistent deficits force interest rates higher, pressures for monetization could become so great as to induce the Federal Reserve to change its policy. 12/

Some Empirical Findings

Most economists agree that, theoretically at least, large and sustained debt-financed deficits raise real rates of interest and crowd private investors out of the capital market. 13/ The obvious question is whether empirical findings confirm this view.

Any attempt to answer this question on the basis of historical data is fraught with difficulties. Figure III-5 shows the accounting relationships among nonfederal saving, net investment (consisting of business and residential investment), and federal deficits over the past three decades. As may be seen, there have been rather large fluctuations in all three of these variables. Since net private investment must be financed out of net savings, Figure III-5 could be interpreted as showing that federal deficits have preempted a portion of such saving, leaving a smaller portion available to support business and residential investment. 14/ For a given pool of saving,

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11/ See Mickey D. Levy, "Factors Affecting Monetary Policy in an Era of Inflation," Journal of Monetary Economics (November 1981), pp. 351-73, and Michael Hamburger and Burton Zwick, "Deficits, Money and Inflation, Journal of Monetary Economics (January 1981), pp. 141-50.

12/ See Thomas Sargent and Neil Wallace, "Some Unpleasant Monetarist Arithmetic," Federal Reserve Bank of Minneapolis, Quarterly Review (Fall 1981), pp. 1-17.

13/ Economists appear unanimous that debt-financed increases in government purchases increase real interest rates. The disagreement is over whether debt-financed tax cuts have the same effect.

14/ Subject to offsetting effects from net capital inflows and state and local government surpluses.

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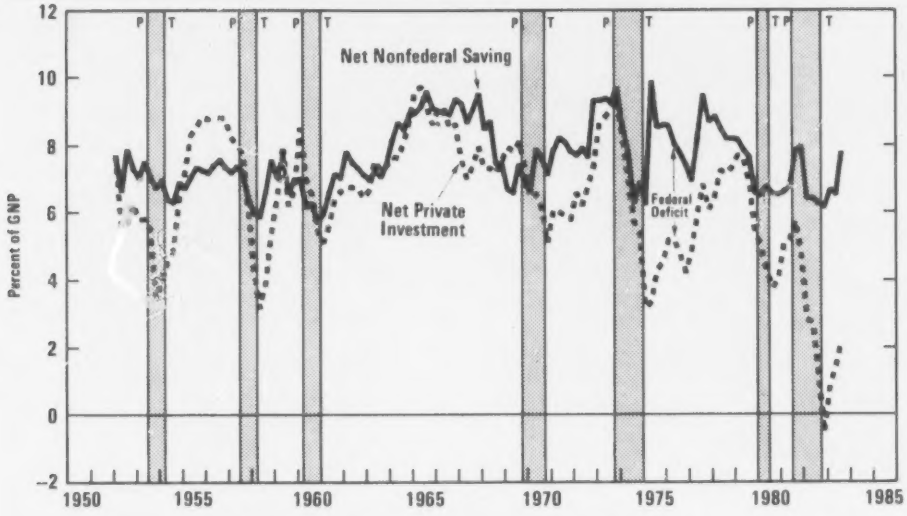
Figure III-5.

Net Nonfederal Saving, Net Private Investment, and Federal Deficit



SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis.

NOTE: P and T lines indicate business cycle peak and trough dates. Federal deficit is represented by vertical distance between saving and investment lines.

in other words, federal deficits appear to crowd out private investment. 15/ Indeed, in the fourth quarter of 1982 net private investment by Americans was negative for the first time in the postwar period (net investment in the United States was slightly positive only because of capital inflows). But Figure III-5, although it is consistent with this view, does not conclusively demonstrate that the deficits actually caused the decline in private investment. Those declines may have been the result of normal cyclical fluctuations. To analyze cause-and-effect relationships, more complex statistical analysis is needed to see whether increases in federal debt sold to the private sector drive up real rates of interest.

Many attempts have been made to determine empirically the impact of federal deficits on real interest rates. 16/ A number of these studies

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15/ See Benjamin M. Friedman, "Managing the U.S. Government Deficit in the 1980s," Working Paper No. 1209, National Bureau of Economic Research (October 1983).

16/ Some studies concentrate on nominal interest rates, assuming that if federal deficits do not affect nominal rates they also do not affect real rates. For real rates to rise, deficits would have to cause the expected rate of inflation to decline, which is considered unlikely.

have been reviewed by CBO (see Appendix A). Some reported a positive effect, others no effect, and still others a negative effect. More specifically, 10 of the 24 studies reported positive effects, 2 found no effect, 2 found negative effects, and 10 reported both positive and negative effects, depending upon the assumptions used. This illustrates the difficulty of disentangling the effects of the multitude of variables affecting interest rates at any one time. A common finding is that deficits seem to have a positive effect, but that the statistical quality of the estimate is not sufficiently good to rule out the possibility of a zero impact. However, this implies that a very large positive impact cannot be ruled out either.

If one examines only studies whose results pass common tests of statistical significance, the weight of the evidence seems clear. All but one suggest that deficits do increase interest rates, and the exception reports mixed effects. 17/

ALTERNATIVE LONG-RUN DEFICIT POLICIES

While there is widespread agreement that something should be done to reduce the size of federal budget deficits, there is far less agreement on precisely what course to follow. Some believe that the goal ought to be to balance the budget and eliminate deficits altogether. Others believe that balancing the budget should take second place to the aims of national policy, including raising living standards over time, which might tolerate deficits so long as the federal debt and interest payments did not rise faster than GNP. 18/ This section examines five long-run deficit policies, which would require reducing the deficit by $110 billion to $276 billion by 1987--the last year that will be covered by the 1985 budget resolution (see Table III-3).

17/ For an interesting discussion of how to choose among theoretical and empirical models, see P.A.V.B. Swamy, Roger K. Conway, and Peter von zur Muehlen, "The Foundations of Econometrics--Are There Any?" Federal Reserve Board Special Studies Paper (January 1984). Also, the use of pre-1980 data for assessing the impact of federal deficits on interest rates may be subject to the Lucas critique. See Robert E. Lucas, "Econometric Policy Evaluation: A Critique," Journal of Monetary Economics (supplement, 1976), pp. 19-46.

18/ Determining the appropriate size of the federal deficit should not be confused with the issue of what is the appropriate size of the federal sector. The latter involves views about the desirability of federal spending; the former addresses the issue of taxing versus debt financing. A decision to reduce the federal deficit may or may not imply a reduction in the federal share of output.

TABLE III-3. BUDGET REDUCTIONS NEEDED TO IMPLEMENT FIVE LONG-RUN DEFICIT POLICIES IN FISCAL YEAR 1987 (In billions of dollars)

	Balanced Budget	Balanced Standardized-Employment Budget	Balanced Middle-Expansion Budget	Constant Debt-to-GNP Ratio a/	Balanced Primary Budget
Baseline 1987 Deficit	248	248	248	248	248
Reduction Needed	248	206	276	110	110
Remaining Deficit b/	0	42	-28 c/	138	138

a/ The deficit reduction reported in this column would keep the federal debt-GNP ratio at its 1986 level in 1987.

b/ These estimates ignore net interest savings that would result if action were taken to reduce the deficit before 1987.

c/ In this table, a minus sign indicates a surplus. That is, to balance the 1987 middle-expansion deficit would require a $29 billion actual surplus.

Balancing the Budget

CBO estimates that the federal deficit under current policies will amount to $248 billion by 1987, or $262 billion when the off-budget deficit is included. To eliminate it by 1987 would mean massive changes in tax and spending policies that could seriously disrupt the current economic expansion.

The goal of balancing the budget is popular; but there are several reasons why balancing the budget might not be an appropriate policy even if it could be achieved.

- First, the most compelling reason is that such a policy not only would preclude using deficits (or surpluses) to stimulate (or restrain) the economy, but also would negate the automatic stabilizing properties of the budget that help to reduce the severity of recessions.

- Second, some federal outlays are for federal capital formation, and deficit financing of federal capital formation is appropriate

even during economic expansions to the extent that such investments benefit future generations. 19/

- Third, deficit-financing of temporary surges in outlays, such as those associated with war and related military spending, is relatively efficient. Raising tax rates temporarily to avoid such deficits is inefficient (wasteful) because it induces people to change the timing of their economic activity simply to reduce their tax liabilities. 20/

- Finally, in some situations, federal borrowing may reduce inefficiencies in the economy that result from imperfections in capital markets. 21/

Not every economist would agree with all these reasons for not balancing the budget, but most maintain that a deficit policy should not keep the budget balanced during recessions. The other reasons are not as widely accepted as legitimate reasons for deficits.

Balancing the Standardized-Employment Budget

For many years, economists have argued that the budget should be allowed to remain in deficit so long as the economy is above some benchmark unemployment rate, rather than being balanced at all times. Such a policy would allow passive, but limited, deficits during recessions that would help to stabilize output and employment. Balancing the standardized-employment rather than actual budget would not on average eliminate deficits over the business cycle, so long as the average rate of unemployment remained above the benchmark level. 22/ Thus, this policy would allow the federal debt to grow over time--a condition ruled out by a

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19/ Sidney L. Jones, "The Capital Budget Alternative," in Toward A Restructuring of Federal Budgeting, The Conference Board (December 1982), pp. 71-80.

20/ Robert J. Barro, "On the Determination of the Public Debt," Journal of Political Economy (1978), pp. 940-71.

21/ Willem H. Buiter, "The Theory of Optimal Deficits and Debt," London School of Economics (September 1983).

22/ For a more precise description of the standardized-employment deficit, see Appendix B.

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balanced-budget policy. 23/ But relative to GNP, both federal debt and interest payments would decline below current levels.

CBO estimates that the standardized-employment deficit will be $206 billion in fiscal year 1987, $42 billion less than the baseline deficit. It would amount to 4.3 percent of the benchmark level of GNP consistent with 6.0 percent unemployment. Eliminating the standardized-employment deficit would leave fiscal policy in a position last observed in the early 1960s. It would also require a very major change in fiscal policy toward restraint.

Balancing the Budget Over the Business Cycle.

An even more restrictive fiscal policy would be to implement a balanced middle-expansion budget--that is, to balance the budget at the midpoint of the business cycle upswing. 24/ This would have the same effect on the deficit as balancing the actual budget, on average, over the course of the business cycle. It would rule out discretionary deficits, but would allow passive deficits during recessions. Cyclical increases in the stock of federal debt would be offset by subsequent decreases. Thus, there would be no long-run increase in the federal debt--the same result achieved by always balancing the actual budget. 25/ Over time, federal debt and interest payments would decline relative to GNP.

Maintaining a Constant Federal Debt-GNP Ratio

The long-run impact of federal deficits on the stock of private capital relative to GNP is thought to depend more on whether deficits raise the

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23/ Many economists now argue that the stock of federal debt relative to GNP is more important than the relative size of the deficit in crowding out private capital.

24/ The middle-expansion deficit, recently developed by the Bureau of Economic Analysis in the Department of Commerce, is based on the average growth of GNP from the middle of one recovery period to the middle of the next, rather than on a fixed rate of unemployment. For a more precise definition of the middle-expansion budget, see Appendix B and Frank de Leeuw and Thomas M. Holloway, "Cyclical Adjustment of the Federal Budget and Federal Debt," Survey of Current Business, (December 1983), pp. 25-40.

25/ This omits consideration of off-budget deficits, changes in the Treasury's cash balance, and other factors that can increase the federal debt even when the budget is balanced.

stock of federal debt relative to GNP than on the size of the deficits in themselves. According to this view, federal debt can be absorbed without raising interest rates so long as it does not grow faster than GNP. More specifically, if savers accumulate wealth (save) in the long run more or less in proportion to GNP, federal debt will not crowd out nonfederal borrowing, or lower the capital-output ratio, so long as it does not grow as a proportion of total wealth. 26/ If interest rates were constant, a deficit policy that kept the federal debt-GNP ratio constant would also hold the federal interest bill constant as a percentage of GNP.

Historical experience suggests that increases and decreases in federal debt relative to GNP have been accompanied by approximately offsetting changes in non-federal debt as a percentage of GNP. 27/ Similarly, growth trends in the federal debt-GNP ratio appear to have been mirrored by opposite trends in the capital-output ratio. 28/ These observations suggest that, at a minimum, a deficit policy should prevent the federal debt-GNP ratio from rising.

The federal debt-GNP ratio is projected to rise from 41.5 percent in 1986 to 43.9 percent in 1987, and the interest bill from 3.4 percent to 3.6 percent of GNP. To keep the debt-GNP ratio at its projected 1986 level would require a deficit reduction of $110 billion.

Balancing the Primary Deficit

A policy that reduces the federal debt-GNP ratio benefits capital formation more than one that keeps this ratio constant. 29/ If it is assumed

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26/ See James Tobin and William C. Brainard, "Pitfalls in Financial Model Building," American Economic Review (May 1968), pp. 99-122.

27/ Benjamin M. Friedman, "Managing the U.S. Government Deficit in the 1980s," Working Paper No. 1209 (National Bureau of Economic Research, October 1983).

28/ Frank de Leeuw and Thomas M. Holloway, "The Measurement and Significance of the Cyclically-Adjusted Federal Budget" (Processed, December 1983).

29/ The concepts in this section are discussed in James Tobin, "Budget Deficits, Federal Debt, and Inflation in Short and Long Runs," Toward a Restructuring of Federal Budgeting, The Conference Board (1982) pp. 51-59.

that there is a long-run tendency for interest rates to approximate GNP growth rates, a policy that balances the budget except for interest costs--a zero primary deficit--would keep the debt-GNP ratio constant. Hence, a policy that kept the deficit below the interest bill would result in a long-term decline in the debt-to-GNP ratio. However, interest rates can deviate from GNP growth rates for long periods of time. During periods when interest rates exceed GNP growth, a primary surplus would be necessary to reduce the debt-to-GNP ratio. Similarly, reduction in the debt-to-GNP ratio is consistent with a limited primary deficit when interest rates fall short of GNP growth rates.

CBO estimates that the primary deficit under current policies will be $110 billion in 1987. With the effective interest rate essentially equal to the growth rate in that year, balancing the 1987 primary deficit would hold the federal debt-to-GNP ratio at its level projected for 1986 under current budget policies. If interest rates were lower relative to GNP growth, both the debt and the interest bill would fall as a percentage of GNP.

POLICY OPTIONS TO REDUCE THE DEFICIT

While large deficits may have adverse economic consequences, abrupt or poorly designed measures to reduce the deficit could be a threat to economic efficiency and continued economic growth. Ideally, major spending cuts and tax increases should occur gradually or with long advance notice so that individuals and firms can adjust to them. If the deficits are allowed to run unchecked too long, however, abrupt action may become unavoidable. 30/

A very large portion of federal outlays is concentrated in a very few budget categories. Defense, entitlements, and net interest constituted 79 percent of outlays in 1980 and are projected to grow to 89 percent by 1986. Social Security and Medicare in turn constituted 53 percent of entitlements in 1980, and will grow to 61 percent by 1986.

Substantial reductions in federal spending cannot be made without involving defense, Social Security, or Medicare. Smaller cuts may be possible in other programs, but those have already been reduced significantly. If cuts are made in defense budget authority, they should be

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30/ For a detailed analysis of budget policies to reduce the deficit, see Congressional Budget Office, Baseline Budget Estimates: 1985-1989 (February 1984), and Reducing the Deficit: Spending and Revenue Options (February 1984).

made quickly, because they will show up in reduced outlays only after a long time lag. On the other hand, if cuts in Social Security and Medicare are made too quickly, recipients will not have time to adjust.

On the revenue side, there are basically three options: to raise tax rates, to broaden the existing tax base, or to introduce new taxes. The first option is simple and could raise substantial revenues, but higher marginal tax rates would magnify inequities and inefficiencies in the tax system.

Broadening the base of existing taxes would hold marginal tax rates down, but the transition could be disruptive for particular groups or sectors of the economy whose plans and contracts are tied to current tax laws.

Finally, revenues could be raised by introducing a new tax. Such a tax might be a proportional tax on consumption, taking the form of a national sales tax or a value-added tax. Other possibilities are an excise tax on domestically produced fuels, or a fee on imported oil. Such taxes might stimulate saving or encourage energy conservation, but would raise price levels and might be considered inequitable to lower-income groups unless offset by modifications in the personal income tax and welfare system.

CHAPTER IV. THE UNITED STATES IN THE WORLD ECONOMY

The early 1980s brought major changes in the world economic scene and in the external economic position of the United States. Anti-inflationary policies in most industrialized countries broke the inflationary spiral of the late 1970s. But they also resulted in the deepest recession since the 1930s, marked by record unemployment throughout the developed world, payments difficulties in many developing and Eastern bloc countries, and stagnation in international trade. In the United States, unprecedented budget deficits in conjunction with anti-inflationary monetary policies have kept interest rates high relative to those abroad, and as a result the dollar has appreciated by about 50 percent since mid-1980. This, along with economic expansion, has caused U.S. net exports of goods and services to plummet.

Strong recoveries are currently under way in the United States, Canada, and several of the newly industrializing countries. Other industrialized trading partners are experiencing more modest rates of economic growth, which should increase somewhat in 1984. The U.S. balance of trade is expected to keep worsening because the lagged effects of earlier dollar appreciation will hold American exports and import-competing products at a competitive disadvantage in 1984 even if the dollar declines. 1/ In addition, more rapid economic growth in the United States as compared to other industrialized countries is expected to depress the U.S. trade balance still further.

The combination of large government budget deficits and anti-inflationary monetary policies is having a major impact on U.S. trade performance. The upward pressure on interest rates has drawn significant amounts of foreign capital into the United States. This has proved to be a mixed benefit. Without the capital inflows, the crowding out of interest-sensitive expenditures such as investments in nonresidential structures and housing would likely be more severe. On the other hand, the capital inflows have pushed up the dollar and weakened U.S. ability to compete internationally, putting heavy pressure on U.S. export and import-competing

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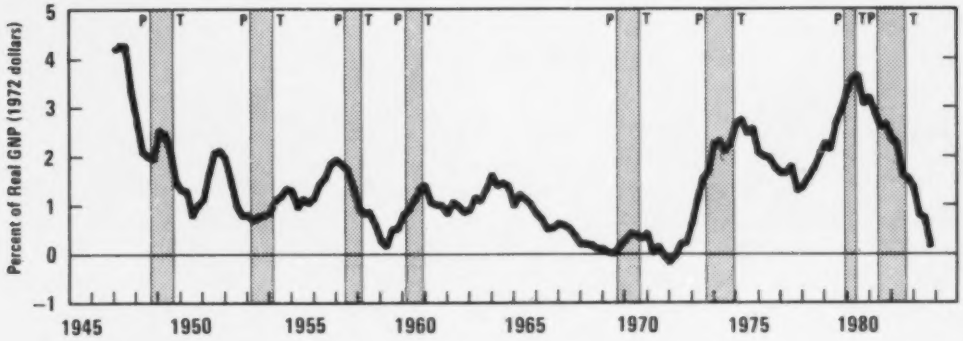
1/ In fact, if the dollar declines in the months to come, the initial impact on U.S. trade balances is likely to be negative rather than positive. At a lower value of the dollar, U.S. importers with foreign-currency payables will need to supply more dollars to honor their existing contracts.

Figure IV-1.

Real Net Exports



SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis.
NOTE: P and T lines indicate business cycle peak and trough dates.

industries. Some analysts have expressed the fear that this reduction in the activity of the highly productive U.S. trade sector will weaken the long-run prospects for the American economy.

For now, foreigners seem willing to continue acquiring U.S. financial claims, spurred by high yields on dollar assets and by optimism as to the economic and political stability of the United States. The longer-run outlook is less certain. Even if interest rates remain high, foreigners may hesitate to continue investing in U.S. assets if massive U.S. trade deficits make them fear a depreciation of the dollar, or if they grow concerned over U.S. fiscal policy. If the inflow of foreign funds were to cease because of such a lack of confidence, substantial upward pressure on domestic interest rates would result, intensifying the crowding out of interest-sensitive domestic expenditure and making it even more difficult for developing countries to service their dollar debts. Another consequence would be a depreciation of the dollar, imparting an inflationary impulse to the American economy.

U.S. NET EXPORTS

Net exports of goods and services (measured in 1972 dollars) peaked in the middle of 1980, with the balance showing a large surplus. Since then the net export balance has suffered the largest deterioration since the late 1940s (see Figure IV-1).

The net export balance normally improves during a recession as the demand for imports slackens. During the most recent recession, however, import volumes remained virtually constant while exports fell, producing a steady decline in the net export balance. As recovery began in the United States in advance of its trading partners, the demand for imports surged ahead of exports. As a result, in the period from the fourth quarter of 1982 through the fourth quarter of 1983, constant-dollar net exports declined from $23 billion to $2.5 billion (annual rates). Measured in current dollars, they declined from a surplus of $37.1 billion at an annual rate in the middle of 1980 to a deficit of $32.6 billion at an annual rate in the fourth quarter of 1983. This erosion of the net export balance has been felt primarily in the merchandise trade sector, and much less in the service account.

Merchandise Trade

The merchandise trade component of net exports has been in deficit since 1975. Recently, this deficit has increased sharply, from $25 billion in 1980 to $69 billion in 1983, with some projections for 1984 going over $100 billion. Several factors have been responsible for this trend: the strong dollar has weakened the international price competitiveness of American products, the slow pace of economic activity in the industrialized world has held back demand for U.S. exports, and U.S. exports to several major developing economies have fallen in the wake of their need to impose austerity measures in order to service their large debts to the rest of the world.

The dimensions of the deterioration can be seen in Table IV-1, which shows the balance of trade by major commodity category. Since 1980:3 (when the dollar began its ascent) the balance has worsened in every commodity category except fuels and lubricants, and military goods. Although the fuel and lubricant balance has been aided by declines in both domestic energy consumption and world oil prices, the near-term outlook is for increasing imports of petroleum products as the economic expansion proceeds.

International Service Transactions

The service account has been a bright spot in U.S. international transactions. Surpluses grew during the 1960s and 1970s, peaking at $39.6 billion in 1981 and then declining to $33 billion in 1982 and to $27 billion at an annual rate in the first half of 1983 (see Figure IV-2).

TABLE IV-1. U. S. TRADE BALANCES BY END-USE CATEGORY (In billions of dollars)

Year and Quarter	Food, Feed, Beverages	Industrial Materials and Supplies					
		Fuels and Lubricants	Paper and Paper-Based Stocks	Textile Supplies and Materials	Chemicals	Metals	Other
1980:3	4.55	-16.58	0.17	0.49	3.22	-1.45	0.75
1980:4	4.86	-18.41	a/	0.46	3.14	-1.60	0.46
1981:1	5.75	-18.48	-0.04	0.36	3.05	-1.37	0.47
1981:2	4.94	-19.88	-0.13	0.38	2.89	-2.40	0.60
1981:3	4.22	-17.56	-0.17	0.28	2.86	-2.94	0.65
1981:4	4.87	-15.41	-0.30	0.19	3.21	-3.31	0.66
1982:1	4.79	-12.74	-0.14	0.17	2.98	-2.92	0.84
1982:2	4.64	-11.31	-0.23	0.16	2.87	-2.11	0.70
1982:3	2.39	-15.64	-0.28	0.08	2.71	-1.85	0.47
1982:4	2.41	-13.66	-0.29	0.13	2.70	-2.02	0.69
1983:1	3.43	-9.19	-0.15	0.03	2.28	-2.11	0.11
1983:2	2.92	-11.70	-0.32	-0.04	2.23	-2.99	0.11

TABLE IV-1. (Continued)

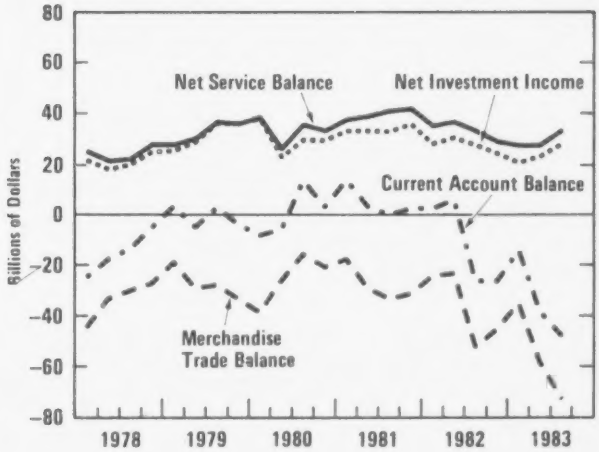
Year and Quarter	Consumer Goods			Capital Goods			
	Durable Manufactured	Nondurable Manufactured	Unmanufactured	Machinery	Civilian Aircraft	Automotive Products	Military Goods
1980:3	-2.76	-1.39	-0.49	8.47	2.75	-3.19	0.66
1980:4	-2.95	-1.33	-0.55	8.67	2.94	-2.93	0.93
1981:1	-3.13	-1.41	-0.65	8.88	2.42	-2.67	0.74
1981:2	-3.23	-1.48	-0.62	8.80	3.11	-2.76	0.90
1981:3	-3.44	-1.65	-0.57	8.23	2.26	-2.97	0.86
1981:4	-3.99	-2.05	-0.58	7.92	1.92	-4.05	1.09
1982:1	-4.05	-1.94	-0.60	7.13	1.94	-3.93	1.22
1982:2	-3.47	-1.94	-0.51	7.23	1.72	-4.78	1.33
1982:3	-3.80	-2.20	-0.54	7.08	1.41	-5.23	1.40
1982:4	-3.60	-2.11	-0.59	6.84	1.18	-4.46	1.84
1983:1	-4.04	-2.75	-0.62	5.61	2.27	-5.28	1.49
1983:2	-4.12	-2.77	-0.81	4.60	2.43	-6.12	1.40

SOURCES: Department of Commerce, Survey of Current Business and Highlights of U.S. Export and Import Trade.

a/ Less than 5 million.

Figure IV-2.

Recent U.S. Trade Performance



SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis.

The largest component of the service surplus is net investment income. Its strength reflects the long-term accumulation of foreign assets by Americans. Direct investment abroad grew steadily over the three decades following World War II, and portfolio investment surged in the 1970s. 2/ Private portfolio claims on foreigners rose from $43 billion in 1970 to $505 billion in 1982. At the end of 1982, total U.S. ownership of all foreign assets was $834 billion, compared to foreign ownership of U.S. assets worth $666 billion. The resulting U.S. net investment position of $168 billion gave rise to net investment income of $27 billion in 1982, accounting for 82 percent of the $33 billion surplus in service transactions.

The other major categories in the service account are royalties and fees, travel and transportation, military transfers, and miscellaneous services. Royalties and fees have been a strong surplus category, generating $6.8 billion of net income in 1982. Travel and transportation transactions have generated annual deficits in the $2 billion to $3 billion range over the last decade.

The strong dollar has increased the deficit in the travel and transportation categories, but the decline in the services balance is due primarily to a decline in net investment income. The relatively slow pace of foreign economic activity and the weakening of petroleum industry profits

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2/ U.S. direct investment involves the purchase of equities in a foreign enterprise in which the total ownership share exceeds 10 percent. Portfolio investment involves ownership of less than 10 percent of equity or the purchase of debt.

have contributed to the decline. An additional factor in the decline of net investment income has been the deterioration in the U.S. international investment position. If this trend persists, net U.S. investment income and the service surplus will surely decline further.

Dollar Appreciation and U.S. Trade Performance

Since the middle of 1980 the trade-weighted dollar exchange rate (as measured by the Federal Reserve Board) has increased by over 50 percent, making foreign goods and their substitutes cheaper in dollar terms. The Federal Reserve Board estimates that this has lowered the U.S. inflation rate by as much as 1½ percentage points per year (on average) between 1980 and 1983. 3/

More important for the assessment of the U.S. international trade performance is the trade-weighted real exchange rate of the dollar--the observed exchange rate adjusted for differences in nations' inflation rates--and this has risen by about 30 percent since mid-1980 (see Figure IV-3). This real appreciation of the dollar has eroded the competitiveness both of U.S. exports and of domestically-produced goods that compete with imports.

The Federal Reserve Board has calculated the impact of the dollar's appreciation on trade flows using a model that incorporates both the direct price effects of dollar appreciation and feedback effects working through domestic and foreign prices and incomes. Its calculations indicate that between mid-1980 and mid-1983 the appreciation of the dollar caused a $40 billion deterioration in U.S. trade balances (at an annual rate). 4/

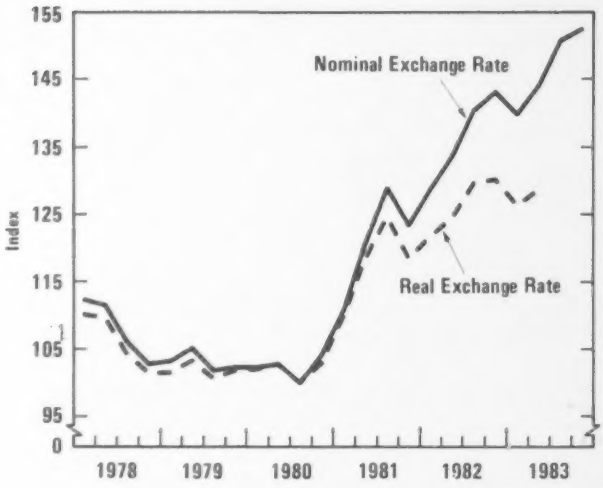
NATIONAL ECONOMIC POLICIES AND NET EXPORTS

The deterioration in U.S. net exports since 1980 has resulted principally from macroeconomic policies both here and abroad. These include anti-inflationary monetary policies adopted after 1979, and the stimulative U.S. fiscal policy followed after 1981.

3/ Testimony of Henry Wallich before the U.S. House of Representatives, Committee on Banking, Finance and Urban Affairs, Subcommittee on International Trade, Investment and Monetary Policy, Oct. 5, 1983.

4/ Ibid.

Figure IV-3.
Trade-Weighted Nominal and Real Exchange Rates



SOURCES: Federal Reserve Board; International Monetary Fund.

NOTE: Federal Reserve Board Trade-Weighted Exchange Rate and real exchange rate are rebased so that the third quarter of 1980 = 100. Real exchange rate is a trade-weighted nominal exchange rate adjusted by trade-weighted relative value-added deflators.

Anti-inflationary Policies

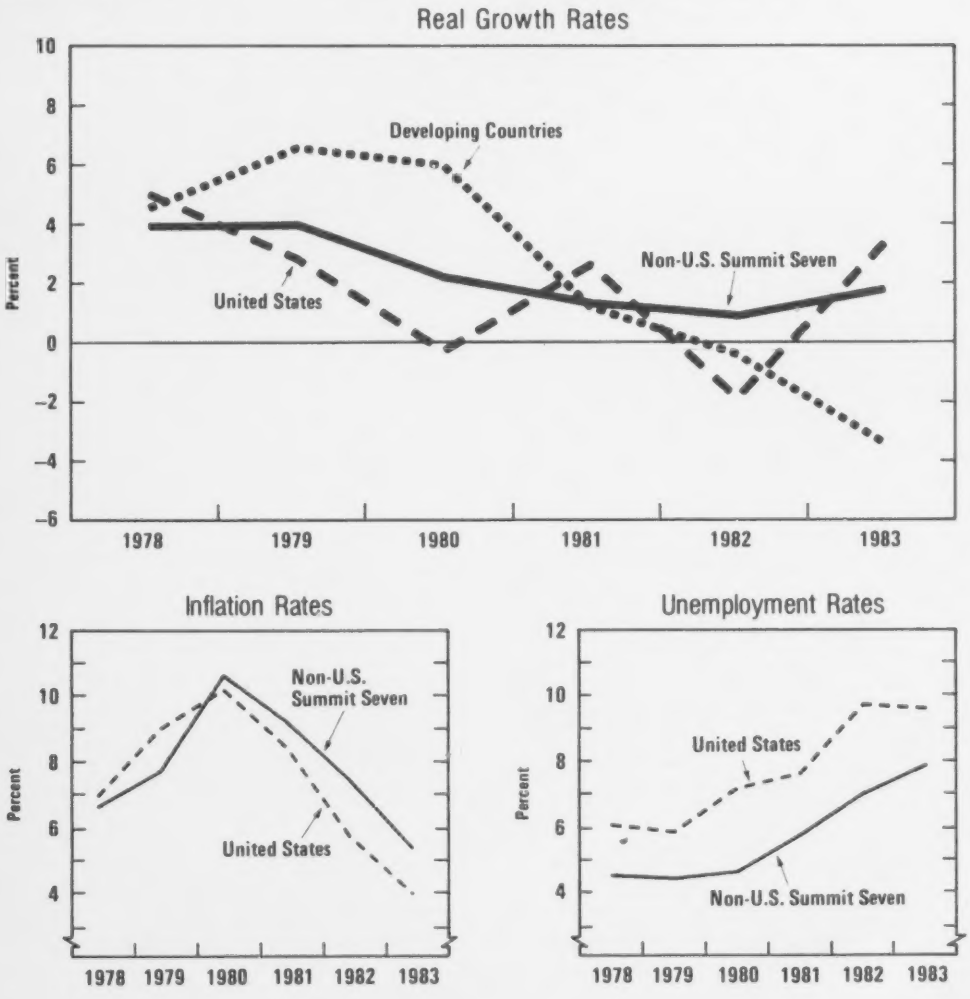
In October 1979, the Federal Reserve moved aggressively to curb inflation by decelerating the growth rate of the money supply (see Chapter II). This anti-inflationary monetary policy contributed to the record high real interest rates that helped precipitate the recession of 1981-1982 (see Figure IV-4). In Europe, inflation fighting was initially carried on by moderating fiscal stimuli. Later on, many industrial countries adopted a more restrictive monetary stance, partially in response to high U.S. interest rates (see Table IV-2).

The fight against inflation has been successful both here and abroad (see Figure IV-4). In the United States, inflation (as measured by the personal consumption deflator) declined to a 4.0 percent rate in calendar year 1983, and among U.S. industrialized trading partners to an average of 5.4 percent. While the anti-inflationary policies were necessary to slow the momentum of price increases that would have eventually undermined the stability of OECD economies, these policies entailed severe costs.

- Unemployment rates over the past three years have been very high (see Figure IV-4). In Europe they are still at record levels, and because of demographic patterns and structural rigidities are likely to remain high well into the current recovery.

Figure IV-4.

International Growth, Inflation, and Unemployment Rates



SOURCES: U.S. Department of Labor, Bureau of Labor Statistics; Organization for Economic Cooperation and Development; U.S. Department of Commerce, Bureau of Economic Analysis, Chase Econometrics,

NOTE: Non-U.S. Summit Seven: Canada, Federal Republic of Germany, France, Italy, Japan, and the United Kingdom. Real output measure for Germany and Japan is GNP, for others, GDP.
Developing countries: Latin American developing countries (GDP).
Unemployment rates are annual averages.

TABLE IV-2. REAL INTEREST RATES: SHORT-TERM RATES LESS GNP/GDP DEFLATORS (In percents)

	1979	1980	1981 H1	1981 H2	1982 H1	1982 H2	1983 H1
United States	2.7	4.4	8.1	6.7	8.9	5.7	3.8
United Kingdom a/	-1.4	-3.1	0.6	4.7	5.8	5.4	4.6
France a/	-0.9	0.2	2.7	2.8	1.3	6.6	1.3
Germany	2.6	5.1	8.2	5.9	6.5	2.5	3.0
Italy a/	-4.0	-3.5	-0.7	6.1	1.9	3.3	3.0
Canada	1.4	1.7	6.2	6.6	4.3	2.2	4.3
Japan	3.2	8.0	5.7	4.5	4.5	6.3	5.0

SOURCES: International Monetary Fund; Organization for Economic Cooperation and Development.

NOTE: The real interest rate is calculated by subtracting from the nominal interest rate the rate of inflation in the subsequent period.

a/ GDP.

- The recession has brought a slump in world trade volumes and pressure to relieve the burden of unemployment through protectionist measures. Since 1980, world trade volumes have been virtually unchanged, with an actual decline in 1982. Protectionism has been evident with respect to imports from Japan and, most recently, in growing U.S.-European trade disputes.

- Efforts by industrial nations to reduce their public-sector deficits have been frustrated by the recession (see Table IV-3). Programs designed to lessen the burden of recession on individuals, such as unemployment compensation, have acted to maintain expenditures although revenues were declining.

Figure IV-5.

U.S. Exports to Major Debtor Countries

SOURCE: International Monetary Fund.

NOTE: Major debtor countries: Mexico, Brazil, Venezuela, Argentina, Poland, Yugoslavia, Chile, and Peru.

- Several major developing countries have experienced difficulties in servicing their external debt and have adopted austerity measures aimed at restoring their external creditworthiness. A combination of high real interest rates, declining commodity prices, and decreased export volumes undermined their ability to honor obligations incurred under markedly different inflationary expectations. In the wake of the international debt crisis, U.S. exports in 1983 to major debtor countries were 33.3 percent below the average of 1980 and 1981 (see Figure IV-5).

The industrial nations adopted these inflation-fighting policies because none of them wanted to repeat the experiences of the mid-1970s. After the 1974 oil price rise, most industrial nations had followed expansionary fiscal policies in order to offset the dampening effects of higher energy prices on economic activity. The high inflation and slow growth rates that followed promoted the opinion that conventional fiscal policies were inappropriate to counter supply shocks. Of particular concern after 1979 was the danger that high inflation rates might be pushed even higher if energy-induced and other price increases were validated and built into inflationary expectations.

Consequently, the European nations enacted programs emphasizing discretionary fiscal restraint coupled with mildly stimulative monetary policies. In the United States, the fight against inflation was from the beginning conducted almost exclusively through tighter monetary policies,

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TABLE IV-3. CENTRAL GOVERNMENT BUDGET BALANCES AS A PERCENT OF GNP

	1973	1975	1976	1977	1978	1979	1980	1981	1982	1983 a/
United States										
Actual b/	-1.2	-3.1	-4.0	-2.4	-2.3	-1.2	-2.3	-2.0	-3.6	-6.1
Standardized c/	-0.8	-0.5	-1.6	-1.0	-1.6	-0.6	-0.7	-0.1	-0.2	-2.4
Japan										
Actual b/	0.5	-2.6	-3.8	-3.8	-5.5	-4.8	-4.5	-4.0	-4.1	
Standardized c/	0.1	-2.1	-3.1	-3.4	-5.3	-4.8	-4.3	-3.7	-2.9	-1.8
Germany										
Actual b/	1.2	-5.7	-3.4	-2.4	-2.5	-2.7	-3.2	-4.0	-3.9	
Standardized c/	0.8	-3.9	-2.6	-1.7	-2.0	-2.7	-2.8	-2.6	-1.2	-0.1
United Kingdom										
Actual b/	-2.7	-4.6	-4.9	-3.2	-4.2	-3.2	-3.3	-2.5	-2.0	
Standardized c/	-3.3	-3.1	-3.6	-2.2	-4.7	-3.7	-2.0	1.0	1.9	2.0
France										
Actual b/	0.9	-2.2	-0.5	-0.8	-1.9	-0.7	0.3	-1.9	-2.6	
Standardized c/	0.7	0.1	1.9	2.1	1.1	2.4	4.4	4.2	3.4	3.9
Italy										
Actual b/	-8.5	-11.7	-9.0	-8.0	-9.7	-9.5	-8.0	-11.7	-12.0	
Standardized c/	-8.4	-9.7	-7.7	-6.4	-7.8	-7.8	-7.2	-9.9	-8.8	-7.8
Canada										
Actual b/	1.0	-2.4	-1.7	-2.6	-3.1	-1.9	-2.1	-1.5	-5.5	
Standardized c/	-0.2	-2.4	-2.0	-2.2	-2.7	-1.4	-0.5	0.6	-0.5	-0.3

SOURCE: Organization for Economic Cooperation and Development, 1983.

a/ OECD projection for non-U.S. countries.

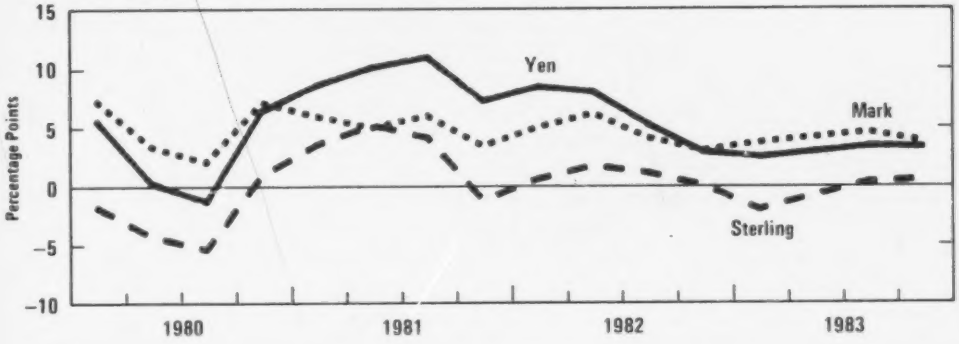
b/ Surplus or deficit (-) as a percentage of nominal GNP.

c/ Standardized surplus or deficit (-) as a percentage of standardized GNP. For a discussion of these concepts, see Appendix B.

leading to a run-up in interest rates. Foreign governments confronted with higher U.S. interest rates had the option of increasing their domestic rates to match U.S. rates--thus dampening already sluggish economies--or watching their financial capital flow out, their currencies depreciate, and their pool of savings available for domestic use diminish. In the end, interest rates were allowed to rise, but generally not enough to eliminate the differential with U.S. rates (see Figure IV-6). As a consequence, capital flowed to the United States and the dollar strengthened.

Figure IV-6.

Eurocurrency Interest Rate Differentials



SOURCE: Bank of America, San Francisco.

NOTE: Mark, Yen, and Sterling indicate Eurodollar-Euromark, Eurodollar-Euroyen, and Eurodollar-Euro-sterling interest rate differentials respectively. Differentials are based on three-month Eurocurrency bid rates.

Although nominal U.S. interest rates declined after mid-1982, the interest differentials have generally continued to favor the dollar. High U.S. deficits, in conjunction with continuing monetary restraint, have created expectations of further capital inflows and continued dollar strength. In addition, some analysts believe that political tensions, social turmoil, and economic uncertainties in many countries have made the United States a haven for foreign investors.

Fiscal Stimulus and the Trade Sector

The sharp move toward fiscal stimulus in 1982 has had a major impact on the composition of U.S. output, allowing some sectors of the economy to expand rapidly and forcing others to contract. Among the major sectors of the economy the trade sector has experienced the sharpest relative contraction.

The vulnerability of the trade sector to a fiscal imbalance is most pronounced under the present regime of floating exchange rates and high capital mobility. Fiscal stimulus implies a growing demand for credit, especially as the economy expands and the private sector increases its borrowing. If the monetary authorities allow only a moderate expansion of domestic credit, upward pressures on interest rates result. This tends to attract foreign capital and to raise dollar exchange rates, unless other countries raise their interest rates to offset it. While the capital inflow has

CAPITAL FLOWS

The foreign financing of U.S. borrowing requires net capital inflows. International transactions data indicate that large amounts of foreign capital have flowed into the U.S. in 1983. In the first quarter of 1983, a statistical discrepancy of $8.8 billion in U.S. international transactions data prevented an accurate measurement of capital flows. However, the discrepancy fell to low levels in the second and third quarters of 1983 and measured net capital inflows for the two quarters totaled $22.4 billion.

Another approach to measuring capital flows is through a balance of payments accounting identity that requires a current account deficit to be matched by a capital account surplus. If current account transactions are measured accurately, they should equal (with sign reversed) the corresponding capital flows. Calculations made on this basis indicate that in the first three quarters of 1983, net capital inflows were $33.6 billion at an annual rate.

Finally, foreigners are estimated to have purchased $9.9 billion of corporate stock and $17 billion of Treasury securities in 1983.

the welcome effect of reducing interest-rate pressures, it forces a greater contraction of the trade sector via exchange-rate-induced changes in relative prices. 5/ Thus, net exports decline both as a result of the exchange-rate effects of the fiscal stimulus and through income channels as

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5/ The theoretical basis for this sequence of events was offered in a classic paper by Robert Mundell. He demonstrated that in a world of flexible exchange rates and high capital mobility, interest-rate pressures created by a fiscal stimulus would lead to an inflow of capital, an appreciation of the currency and a deterioration of net exports, partially negating the intended expansionary effect on domestic activity. See "Capital Mobility and Stabilization Policy Under Fixed and Flexible Exchange Rates," Canadian Journal of Economics and Political Science, vol. 29 (November 1963), pp. 475-85.

TABLE IV-4. SAVING AND INVESTMENT (In billions of dollars, at annual rates)

	Net Private Saving	Federal Deficit a/	State and Local Government Surplus	Net Foreign Investment	Statistical Discrepancy	International Investment Position
1980	33.5	-61.2	30.6	6.3	2.3	120.6
1981	34.6	-62.2	35.3	4.0	-4.9	156.4
1982	107.1	-147.1	31.3	-8.3	0.5	168.6
1983	96.5	-182.9	51.0	-35.2	0.1	133.4 b/

SOURCE: U. S. Department of Commerce, Bureau of Economic Analysis.

a/ National Income Accounts concept.

b/ Value is estimated by adjusting the reported international investment position at the end of 1982 by net foreign investment in 1983.

a portion of the stimulus spills over into a demand for foreign products. 6/ In the United States, even before the fiscal stimulus began in 1982, a disinflationary monetary policy had yielded a strong dollar. The stage was thus set for a good portion of the stimulus to be offset by a deteriorating trade balance.

In terms of national income accounting, the same phenomenon is reflected in deficient net private domestic saving relative to the borrowing requirements of the public sector. In calendar year 1983, the federal government's deficit (dissaving) of $182.9 billion (NIA concept) was only partially met by net private domestic saving of $96.5 billion and state and local government budget surpluses of $51.0 billion (see Table IV-4). The rest had to be offset by borrowing $35.2 billion (on a net basis) from abroad,

6/ By itself, this direct goods market or income effect of fiscal expansion would put downward pressure on the dollar. In a world of high capital mobility, however, a bond-financed fiscal stimulus will lead to an appreciation of the dollar and an exchange rate-induced deterioration in net exports. Thus, both income and relative price effects contribute to the decline in net exports.

which corresponds to the U.S. current account deficit over the period in question. 7/

THE CRUCIAL ROLE OF POLICY

The outlook for the dollar and, consequently, U.S. international economic performance depends critically on the future course of monetary and fiscal policies. In the short run, U.S. government deficits of the present size accompanied by nonaccomodative monetary policy are likely to keep dollar interest rates at their high levels. This is made all the more probable by the fact that private domestic saving is expected to be relatively small in proportion to GNP as compared with the average for postwar cycles, while the budget deficit will be larger (see Table IV-5).

Even in the near term, however, high interest rates may not persuade foreigners to continue investing in U.S. assets. Large trade deficits may create expectations of dollar depreciation, or concern over the sustainability of current U.S. fiscal policies may dictate a diversification of portfolios into non-dollar assets. Should net inflows of foreign capital suddenly stop or turn into outflows, interest-rate pressures in domestic credit markets would grow and the debt problems of developing countries could be expected to intensify. The dollar might drop off quickly, engendering strong inflationary pressures.

Over the longer term, foreigners may be reluctant to continue financing U.S. credit demands at the present scale--even at high interest rates. For one thing, if capital inflows seem to be financing consumption rather than investment, this would diminish their desire to hold U.S. financial claims. For another, principles of portfolio diversification must eventually deter foreigners from placing ever larger proportions of their assets in dollar-denominated instruments. Third, foreign governments may become unwilling to sit by and see their economies' savings drained off into U.S. capital markets and might take action to stem these capital outflows.

7/ The underlying GNP accounting identity is

$$(G-T) + (I-S) = \text{Current Account Deficit (Net foreign disinvestment)}$$

The identity shows that if private-sector net saving is not sufficient to offset public-sector dissaving then the difference must be made up by importing more goods and services than are exported.

TABLE IV-5. FEDERAL DEFICITS AND PRIVATE SAVINGS COMPARED TO HISTORICAL AVERAGES (In percents)

Year and Quarter	Actual			Medians in Postwar Cycles			
	Federal Deficit /GNP	Federal Deficit /Gross Private Saving	Gross Saving /GNP	Quarters Before and After Trough	Federal Deficit /GNP	Federal Deficit /Gross Private Saving	Gross Saving /GNP
1981:1	1.5	9.3	16.1	-7	0.1	0.6	17.4
1981:2	1.6	9.7	16.3	-6	0.3	1.7	17.1
1981:3	2.1	11.7	16.9	-5	0.3	1.6	17.2
1981:4	3.2	17.3	16.2	-4	-0.1	-0.5	17.0
1982:1	3.6	21.1	14.4	-3	0.4	2.7	16.1
1982:2	3.7	21.7	14.3	-2	1.3	8.1	15.4
1982:3	5.1	30.2	12.9	-1	1.7	10.4	14.4
1982:4 a/	6.7	39.5	11.3	0	2.4	14.6	13.5
1983:1	5.8	33.9	12.6	1	2.1	13.0	14.3
1983:2	5.1	31.0	12.9	2	1.8	10.8	15.2
1983:3	5.6	31.9	13.5	3	1.1	6.7	15.7

SOURCE: U. S. Department of Commerce, Bureau of Economic Analysis.

a/ Trough.

Prolonged financing of deficits through capital inflows could prove costly in the future. Such inflows represent a transfer of financial claims to foreigners that this country must be prepared to repay. If the inflows are not put to productive use--that is, invested in capital formation--Americans will have created claims on themselves without developing the means to honor those claims. In that case, the transfer of goods and services to foreigners in the future will necessarily entail an absolute reduction in domestic consumption and a decline in the living standards of U.S. citizens.

APPENDIXES

APPENDIX A. DEFICITS AND INTEREST RATES: EMPIRICAL FINDINGS AND SELECTED BIBLIOGRAPHY

This appendix contains a table providing information about various studies that have empirically examined the impact of federal deficits on interest rates, as well as a bibliography of the studies surveyed. Information contained in the table includes the time period examined, the type of statistical technique employed, the interest rate studied, the deficit measure used, the sign of the deficit variable, and whether or not the deficit variable effect on interest rates is significant.

1. Michael D. Bradley, "Federal Debt Surprises and Real Interest Rates: Whither Crowding Out?" Department of Economics, George Washington University, mimeo, October 1983.

2. Victor A. Canto and Donald Rapp, "The 'Crowding Out' Controversy: Arguments and Evidence," Economic Review, Federal Reserve Bank of Atlanta, August 1982, pp. 33-37.

3. Jack Carlson, statement before the Joint Economic Committee, October 21, 1983.

4. Frank de Leeuw and Thomas M. Holloway, "The Measurement and Significance of the Cyclically Adjusted Federal Budget," Bureau of Economic Analysis, mimeo, December 1983.

5. William G. Dewald, "Federal Deficits and Real Interest Rates: Theory and Evidence," Economic Review, Federal Reserve Bank of Atlanta, January 1983, pp. 20-29.

6. Gerald P. Dwyer, Jr., "Inflation and Government Deficits," Economic Inquiry, July 1982, pp. 315-29.

7. Otto Eckstein and Christopher Probyn, "Do Budget Deficits Matter?" Data Resources U.S. Review, December 1981, pp. 1.9-1.15.

8. Paul Evans, "Do Large Deficits Produce High Interest Rates?" Department of Economics, Stanford University, mimeo, October 1983.

Federal Deficits and Interest Rates: Some Empirical Findings

Author (Year of Study)	Time Period	Data Frequency	Statistical Technique	Dependent Variable: Short-term Interest Rate	Dependent Variable: Long-term Interest Rate	Deficit Variable: Federal Deficit	Deficit Variable: Federal Debt Privately Held	Deficit Variable: Other	Sign of Deficit Variable	Statistically Significant
Bradley (1983)	1966-1982	Monthly	IV [b]	X	X		X		Mixed [e]	No
Canto and Rapp (1982)	1929-1980	Annual	Granger-Sims Tests	X		X			Zero	No
Carlson (1983)	1953-1983	Quarterly	OLS [c]		X		X		Positive	Yes
DeLeeuw and Holloway (1983)	1956-1983	Annual	OLS		X			X	Positive [f]	Yes [g]
Dewald (1983)	1953-1981	Quarterly	OLS	X	X		X		Positive	Mixed [h,i]
Dwyer (1982)	1952-1978	Quarterly	VAR [d]				X		Mixed	No
Eckstein and Probyn (1981)	1966-1980	Quarterly	Large-scale macroeconometric model	X	X	X			Positive	Simulation
Evans (1983)	1979-1983 [a]	Monthly	OLS	X	X	X			Negative	Mixed [j]
Fackler and McMillin (1983)	1963-1979	Quarterly	VAR		X		X		Zero	No
Feldstein and Eckstein (1970)	1954-1969	Quarterly	OLS		X		X		Positive	Yes [k]
Feldstein and Chamberlain (1973)	1954-1971	Quarterly	OLS		X	X	X		Negative	No
Frankel (1983)	1954-1980	Annual	Theil-Goldberger mixed estimation	X	X		X		Mixed	No
Hoelscher (1983a)	1952-1976	Quarterly	IV	X			X	X	Positive	No
Hoelscher (1983b)	1953-1982	Annual	IV & OLS	X	X	X	X	X	Mixed	Mixed [l]
Kudlow (1981)	1958-1980	Annual	OLS		X			X	Positive	Yes
Makin (1983)	1959-1981	Quarterly	OLS	X		X		X	Positive	Mixed [m]
Makin and Tanzi (1983)	1960-1981	Quarterly	IV	X		X			Mixed	Yes
Mascaro and Meltzer (1983)	1969-1981	Quarterly	OLS	X	X		X		Mixed	No [n]
Miller (1982)	1948-1982	Annual	VAR	X				X	Positive	No
Motley (1983)	1958-1982	Monthly	OLS	X			X		Mixed	Mixed [o]
Plosser (1982)	1954-1978	Quarterly	VAR	X	X		X		Mixed	No [p]
Roley (1982)	1960-1975	Quarterly	Modified large-scale macroeconometric model	X	X	X		X	Mixed	Simulations
Sinai and Rathjens (1983)	1960-1982	Quarterly	OLS	X	X	X	X	X	Mixed	Mixed
Sinai and Rathjens (1983)	1983-1986	Quarterly	Large-scale macroeconometric model	X	X	X			Positive	Simulation

[a] Also 3 major war periods.
[b] Instrumental variables.
[c] Ordinary least squares.
[d] Vector autoregressions.
[e] Some positive, some negative.
[f] Negative in first-difference form.
[g] No in first-difference form.
[h] Some significant, some insignificant.
[i] No short rate, Yes long rate.
[j] No short rate, Yes long rate.
[k] Mixed signs and significance in flow models.
[l] No and negative sign for short rate, Yes and positive sign for long rate.
[m] Not significant in one case, marginally in other.
[n] Yes and negative for short rate for 1969-1979.
[o] No for most recent period.
[p] 3 instances of significance at 10% level.

9. James S. Fackler and W. Douglas McMillin, "Government Debt and Macroeconomic Activity," Southern Economic Association meetings, Washington, D.C., mimeo, November 1983.

10. Martin S. Feldstein and Otto Eckstein, "The Fundamental Determinants of the Interest Rate," Review of Economics and Statistics, November 1970, pp. 363-75.

11. Martin S. Feldstein and Gary Chamberlain, "Multimarket Expectations and the Rate of Interest," Journal of Money, Credit and Banking, November 1973, pp. 873-902.

12. Jeffrey A. Frankel, "A Test of Portfolio Crowding-Out and Related Issues in Finance," Working Paper No. 1205, National Bureau of Economic Research, September 1983.

13. Gregory P. Hoelscher, "Federal Borrowing and Short Term Interest Rates," Southern Economic Journal, October 1983a, pp. 319-33.

14. Gregory P. Hoelscher, "The Evidence on Deficits and Interest Rates," Southern Economic Association Meetings, Washington, D.C., mimeo, October 1983b.

15. Lawrence A. Kudlow, statement before the Senate Budget Committee, statistical appendix, October 20, 1981.

16. John H. Makin, "Real Interest, Money Surprises, Anticipated Inflation and Fiscal Deficits," Review of Economics and Statistics, August 1983, pp. 374-84.

17. John H. Makin and Vito Tanzi, "The Level and Volatility of Interest Rates in the United States: The Role of Expected Inflation, Real Rates and Taxes," Working Paper No. 1167, National Bureau of Economic Research, July 1983.

18. Angelo Mascaro and Allan H. Meltzer, "Long- and Short-Term Interest Rates in a Risky World," Journal of Monetary Economics, November 1983, pp. 485-518.

19. Preston J. Miller, "Some Issues Concerning the Effects of Budget Deficits," Federal Reserve Bank of Minneapolis, Research Department Working Paper No. 220, October 1982.

20. Brian Motley, "Real Interest Rates, Money and Government Deficits," Economic Review, Federal Reserve Bank of San Francisco, Summer 1983, pp. 31-45.

21. Charles I. Plosser, "Government Financing Decisions and Asset Returns," Journal of Monetary Economics, May 1982, pp. 325-52.

22. V. Vance Roley, "Asset Substitutability and the Impact of Federal Deficits," mimeo, September 1982.

23. Allen Sinai and Peter Rathjens, "Deficits, Interest Rates, and the Economy," Data Resources U.S. Review, June 1983, pp. 1.27-1.41.

APPENDIX B. UNDERSTANDING AND MEASURING THE STRUCTURAL FEDERAL DEFICIT

The federal deficit is the difference between government revenues and government expenditures. It increases automatically during recessions because tax revenues fall and outlays on social programs increase. For this reason, the size of the actual deficit is not a reliable measure of budget policy and its economic significance. Other measures are needed to separate the budget effects of the business cycle from the budget effects of tax and spending policies. 1/

For this purpose, economists have developed a number of noncyclical or structural budget measures. For example, the standardized-employment deficit (formerly called the high-employment deficit) measures the difference between budget revenues and outlays at cyclically adjusted levels of output and unemployment. 2/ By eliminating the cyclical component, the standardized-employment deficit shows how much of the actual deficit is due to discretionary fiscal policy and other noncyclical or structural factors.

For some purposes, however, simply adjusting the budget for the effects of the business cycle may not be sufficient. For example, the standardized-employment budget does not take into account noncyclical factors that can alter the effects of federal borrowing on credit markets. To address such issues, other measures of the federal deficit are needed.

1/ This Appendix is based on the work done at the Bureau of Economic Analysis. See Frank de Leeuw and Thomas M. Holloway, "Cyclical Adjustment of the Federal Budget and Federal Debt", Survey of Current Business (December 1983), pp. 25-40; Frank de Leeuw and Thomas M. Holloway, "The High-Employment Budget: New Estimates and Automatic Inflation Effects," Survey of Current Business (April 1982), pp. 21-33; and Frank de Leeuw, Thomas M. Holloway, Darwin G. Johnson, David S. McClain and Charles A. Waite, "The High-Employment Budget: New Estimates, 1955-1980," Survey of Current Business (November 1980), pp. 15-21, 31-43.

2/ The terms "cyclically adjusted" and "noncyclical" are used interchangeably in this appendix.

This appendix presents several measures of the structural deficit. The standardized-employment deficit is considered first, along with the middle-expansion deficit--a measure recently developed by the Bureau of Economic Analysis. These two measures differ only in the way their cyclical adjustments are calculated. Two other measures are presented that take into account factors affecting the impact of federal deficits on credit markets and private capital formation. The inflation-corrected structural deficit includes an adjustment for the decline in the value of federal debt due to inflation. The primary structural deficit excludes interest payments to derive a measure more closely related to the growth of federal debt relative to GNP--a ratio that has gained prominence in discussions of how deficits can lower the stock of business capital relative to GNP.

Table B-1 shows how these measures of the structural deficit compare with the actual deficit. Over the course of business cycles, the actual deficit is larger than most of the structural measures. All of the measures have increased markedly in recent years, and are projected to continue increasing throughout the 1980s under current policies.

THE STRUCTURAL DEFICIT

The structural deficit helps to disentangle the budget effects of tax and spending legislation from the short-term budget effects of economic fluctuations. Thus it is intended to indicate what portion of the actual deficit is due to the business cycle, and what portion reflects budget policies that do not align noncyclical revenues with outlays.

The structural deficit may be calculated by estimating what the budget balance would be if the economy were at some specified benchmark rate of unemployment and the corresponding level of output. When actual output is below the benchmark level, structural revenues are derived by adding to actual (or projected) revenues the shortfall in individual and corporate income taxes, social insurance contributions, excise taxes, and other revenues attributable to a below-benchmark level of output. 3/ Similarly, when the actual unemployment rate is above the benchmark rate, structural outlays are calculated by subtracting from actual (or projected) outlays the additional outlays for Unemployment Insurance, Social Security benefits, Food Stamps, Aid to Families with Dependent Children, and other transfer programs attributable to an

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3/ When actual GNP exceeds the benchmark level, structural revenues are calculated by subtracting from actual revenues the additional revenues attributable to an above-benchmark level of output.

unemployment rate higher than the benchmark. 4/ An adjustment also can be made to net interest payments to take into account the cyclical response of federal debt and interest rates. On the one hand, when GNP is below its benchmark level, cyclically adjusted debt is smaller than actual debt. On the other hand, cyclically adjusted interest rates are likely to be higher than actual interest rates. Cyclically adjusted interest payments, the product of cyclically adjusted debt times the cyclically adjusted interest rate, therefore can be either higher or lower than actual interest payments; the outcome depends on the levels of interest rates and of the federal debt.

Choosing a GNP Benchmark

The major issue involved in calculating the structural deficit is what to use as a benchmark measure of GNP (and rate of unemployment). The selection of a GNP benchmark is important because the difference between it and actual GNP--the GNP gap--is the major determinant of how much of the deficit is assumed to reflect cyclical factors. For a given level of actual GNP, a relatively high GNP benchmark implies a smaller structural deficit and less noncyclical borrowing by the federal sector. A relatively low GNP benchmark has the opposite implications. 5/

The relationship between the benchmark level of GNP and the size of the structural deficit is illustrated in Figure B-1. The vertical axis is the size of the deficit or surplus for a given structure of tax laws and spending programs (represented by the diagonal line FF). GNP is measured on the horizontal axis. When actual GNP equals Y, the actual deficit is OC. With benchmark GNP equal to Y1, the structural deficit is OB, and the cyclical deficit is BC. At the higher benchmark level of GNP, Y2, the structural component of the budget is smaller (OA). Thus, the higher is the benchmark

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4/ When the unemployment rate is below the benchmark level, structural outlays are calculated by adding to actual outlays the shortfall in outlays attributable to a lower-than-benchmark unemployment rate.

5/ Usually, the change in the structural deficit over time--rather than its level--is used to measure the short-run expansionary or contractionary thrust of fiscal policy on the growth of output. The level of the structural deficit is more relevant to the issue of long-run crowding out of private fixed capital, because the level determines the growth of cyclically adjusted federal debt. In the short run, deficits may accelerate output growth, while depressing the capital-output ratio in the long run through their impact on the federal debt-GNP ratio.

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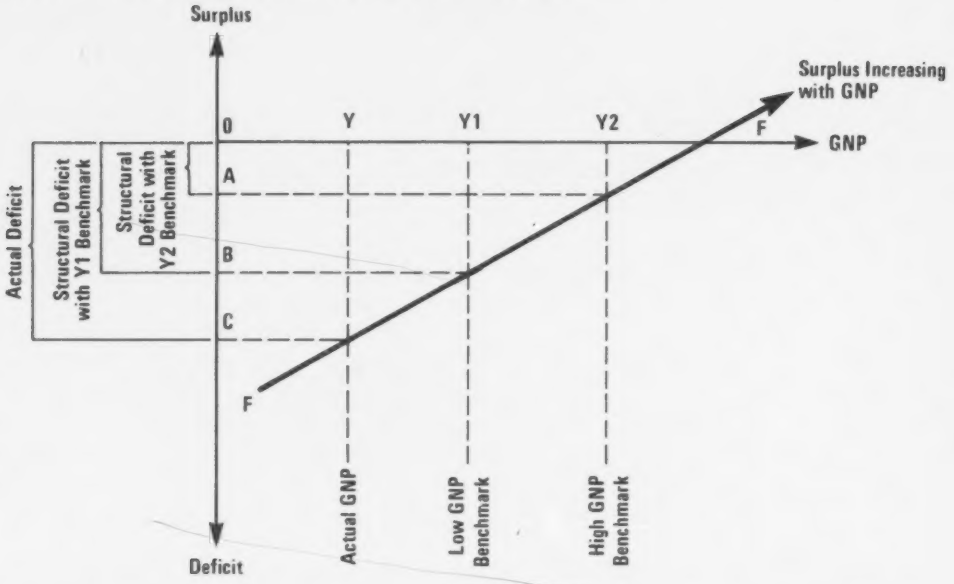
Figure B-1.

Benchmark GNP and the Structural Deficit



level of GNP, the smaller is the (measured) noncyclical component of the deficit.

Potential GNP. Traditionally, the benchmark GNP has been a measure of "high-employment" or "potential" GNP, assumed to reflect the lowest rate of unemployment consistent with stable inflation--the "nonaccelerating-inflation rate of unemployment" (NAIRU). 6/ (The estimation of potential GNP and another benchmark GNP measure is discussed in the accompanying box.) The rationale for using potential GNP as a benchmark is that it is a desirable long-range economic goal, departures

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6/ Initially, the concept of potential GNP was associated with the maximum non-inflationary level of output. Over time, however, this concept has been changed to mean the maximum level of output consistent with nonaccelerating inflation. Under this definition, potential GNP can be associated with any constant rate of inflation.

from which--the GNP gap--are interpreted as policy-relevant measures of either economic slack (if positive) or excess demand (if negative). But estimates of the NAIRU--and thus potential GNP--are subject to considerable uncertainty, because the relationship between unemployment and inflation rates has changed over time. Moreover, the economy seldom operates at its potential. Consequently, the gap between actual and potential GNP cumulates, resulting in a widening gap between actual and cyclically adjusted federal debt. 7/

The Middle-Expansion GNP Trend. An alternative is to construct a noncyclical measure of GNP based on actual output levels at similar stages of each business cycle, such as cyclical peaks or troughs. This idea is reflected in the "middle-expansion trend," recently developed by the Bureau of Economic Analysis. 8/ This measure is a trend line that passes through the average level of GNP in the three years of growth after GNP has surpassed its prerecession peak. The middle-expansion trend sometimes may represent a level of output associated with very high unemployment or inflation rates. But, unlike potential GNP, there is no persistent gap between the middle-expansion trend and actual GNP, since deviations in one direction are subsequently offset by deviations in the other. Because of this feature, the cyclically adjusted federal debt based on the middle-expansion trend equals the actual federal debt, on average. 9/

Structural Deficits with Alternative Benchmarks. The advantages and disadvantages of these alternative benchmarks suggest that more than one estimate of the structural deficit is desirable. Estimates based on potential GNP can be used to determine what portions of actual deficits are attributable to departures from maximum resource utilization consistent with stable inflation. Estimates based on the middle-expansion trend can be used to assess the degree and implication of budgetary imbalance due to deviations from average output trends.

7/ The debt is the cumulative deficit, and the cyclically adjusted debt is the actual debt less the cumulative differences between the actual deficit and the cyclically adjusted deficit.

8/ See Frank de Leeuw and Thomas Holloway, "Measuring and Analyzing the Cyclically-Adjusted Budget," in Federal Reserve Bank of Boston, The Economics of Large Government Deficits (forthcoming).

9/ An alternative approach is to calculate a moving average of actual GNP. This procedure is similar to the middle-expansion trend, but may be more influenced by cyclical changes.

ESTIMATING CYCLICALLY ADJUSTED GNP

Potential GNP

Basically, there are two steps in the estimation of potential GNP--the highest level of real output consistent with nonaccelerating inflation. The first step is to determine the lowest rate of unemployment that can be maintained without increasing the rate of inflation. The second step is to calculate the level of output associated with this "nonaccelerating inflation rate of unemployment" (NAIRU).

Until recently, calculations of the high-employment budget by the Bureau of Economic Analysis (BEA) were based on the assumption that the NAIRU rose from 4 percent in 1955 to around 5 percent in recent years. This increase in the benchmark unemployment rate reflected demographic changes in the labor force--mainly the increased proportion of youth--that raised the rate of unemployment associated with the same degree of labor-market tightness observed with a 4 percent rate of unemployment in 1955. The experience of the past decade, however, suggests that a 5 percent rate of unemployment has not been compatible with stable inflation. Although there is disagreement about the precise rate of unemployment consistent with stable inflation, most analysts assume that it is at least 6 percent--the rate recently adopted by the BEA to calculate the high-employment budget.

Given a time series of the benchmark rate of unemployment, an estimate of potential output can be based on an identity that expresses output, Y, as the product of population P; the ratio of labor force to population L/P--the labor force participation rate; the ratio of hours worked

Figure B-2 shows the structural deficits corresponding to potential GNP and to the middle-expansion trend, each expressed as a percentage of its benchmark. On average, the standardized-employment deficit was small during the 1960s but posted a deficit of 1.2 percent of potential GNP in the 1970s. During the 1980s, it is estimated to average 3.0 percent. The middle-expansion deficit averaged 1.3 percent of its benchmark in the 1960s, and 1.8 percent in the 1970s, and is projected to average 4.6 percent in the 1980s. Between 1984 and 1989, the standardized-employment deficit rises from 3.0 percent to 5.5 percent of potential GNP, while the middle-

H to the labor force H/L--average annual hours of work; and the ratio of output to hours Y/H--labor productivity:

(B3) $Y = P\ (L/P)\ (H/L)\ (Y/H)$.

Potential output is then determined by estimating the trend growth of L, H/L, and Y/H consistent with the benchmark unemployment rate.

The Middle-Expansion Trend

The "middle-expansion trend" measure of cyclically-adjusted GNP is a series of constant growth paths passing through the average levels of GNP at similar stages of each business cycle. To calculate this benchmark series, each business cycle is divided into four stages: (1) recession--measured as the period from the peak to the trough; (2) early recovery--defined as the period from the trough quarter to the quarter when GNP reaches its pre-recession peak; (3) middle expansion--the 12 quarters following the early recovery stage, and (4) late expansion--that period from the end of middle-expansion to the next recession. The (geometric) average of GNP during the middle-expansion stage is calculated and placed at the center of this period. (If a recession begins before the late expansion stage, the middle-expansion is abbreviated.)

This procedure produces one reference point during each business cycle. Constant growth-rate lines connecting these points provide the other reference levels of GNP for calculating the structural budget deficit. The corresponding rates of unemployment are derived in a similar manner, with the exception that the first quarter of the middle-expansion is omitted because of the lagged response of unemployment to GNP growth during recoveries.

expansion deficit increases from 4.7 percent to 7.2 percent of its benchmark. 10/

10/ The forecast of potential GNP assumes a 6 percent benchmark unemployment rate. The middle-expansion trend corresponds roughly to a 7.5 percent average rate of unemployment.

TABLE B-1. ALTERNATIVE MEASURES OF THE STRUCTURAL DEFICIT

Fiscal Year	Federal Budget Deficit	Standardized-Employment Deficit	Inflation-Corrected Standardized-Employment Deficit	Primary Standardized-Employment Deficit	Middle-Expansion Deficit
1956	4.0	6.1	12.0	11.2	3.4
1957	3.3	7.3	14.3	11.7	3.5
1958	-2.9	7.0	10.4	7.9	1.8
1959	-12.9	-4.1	1.2	5.3	-10.7
1960	0.3	8.7	11.8	12.2	1.1
1961	-3.4	9.5	11.5	17.5	1.7
1962	-7.1	2.5	6.3	5.9	-5.6
1963	-4.8	4.2	7.2	9.8	-4.1
1964	-5.9	0.3	3.7	10.1	-7.4
1965	-1.6	2.2	6.9	6.9	-5.1
1966	-3.8	-6.4	0.7	2.2	-18.7
1967	-8.7	-11.6	-6.1	2.7	-13.5
1968	-25.2	-29.0	-18.9	-18.0	-35.5
1969	3.2	-3.8	7.3	14.0	-9.9
1970	-2.8	-1.8	11.1	6.7	-6.5
1971	-23.0	-14.1	-2.4	1.0	-17.0
1972	-23.4	-16.0	-6.5	0.0	-17.5
1973	-14.8	-18.6	-4.8	-9.2	-20.3
1974	-4.7	-7.0	14.6	11.0	-11.3
1975	-45.2	-18.3	6.9	-6.3	-24.9
1976	-66.4	-34.0	-16.1	-29.9	-43.8
1977	-44.9	-22.3	2.5	-24.8	-37.9
1978	-48.8	-38.4	-2.9	-19.8	-59.9
1979	-27.7	-23.4	18.8	4.5	-51.0
1980	-59.6	-32.9	15.3	-2.6	-64.6
1981	-57.9	-15.3	40.1	18.8	-53.1
1982	-110.6	-25.4	12.9	20.3	-70.0
1983	-195.4	-84.8	-50.5	-26.7	-134.4
			Projections		
1984	-189.6	-113.5	-59.3	-15.9	-168.5
1985	-194.8	-136.0	-69.1	-36.6	-199.1
1986	217.1	-166.8	-92.7	-49.2	-234.2
1987	-248.4	-205.7	-123.8	-67.0	-276.5
1988	-281.7	-246.9	-157.1	-82.3	-321.5
1989	-326.4	-299.4	-201.9	-111.0	-376.1

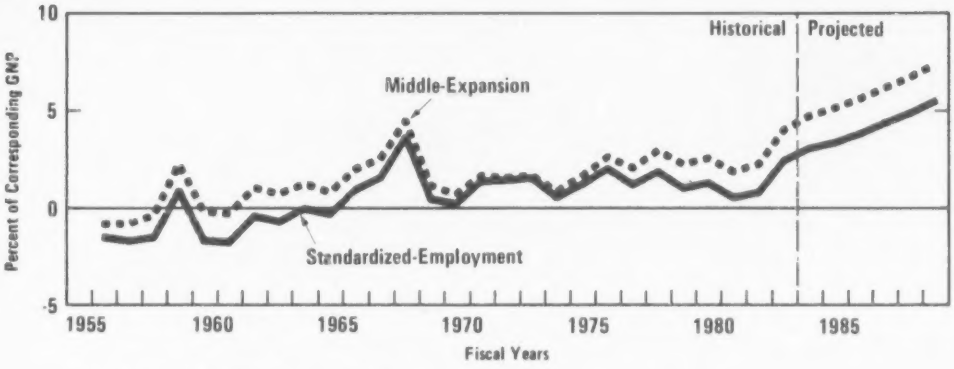
SOURCES: Congressional Budget Office, Office of Management and Budget.

NOTES: Projections incorporate baseline budget policy assumptions.

Deficits are shown as negative numbers.

Figure B-2.

Standardized-Employment and Middle-Expansion Deficits



SOURCE: Congressional Budget Office.

NOTE: Middle-expansion denotes the middle expansion deficit as a percent of middle-expansion GNP. Standardized-employment denotes the standardized-employment deficit as a percent of standardized-employment GNP.

THE INFLATION-CORRECTED STRUCTURAL DEFICIT

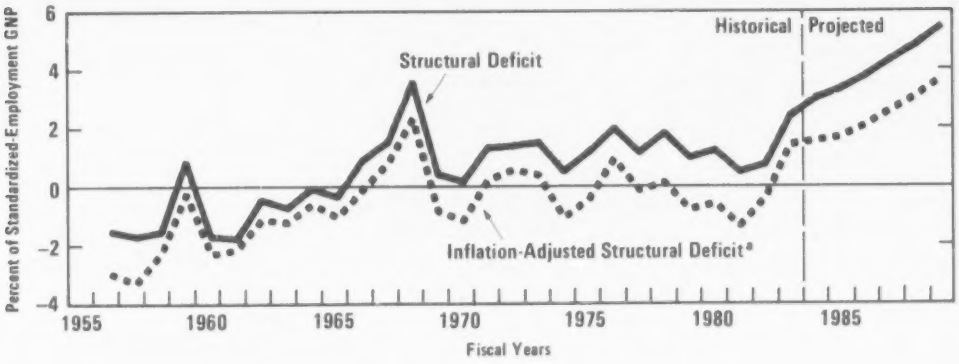
For the purpose of assessing the effects of fiscal policy on real interest rates, the structural deficit frequently is adjusted for the decline in the value of outstanding federal debt due to inflation. 11/ To the extent that owners of Treasury securities increase their savings to offset these capital losses, the impact of federal borrowing on national savings and real interest rates is reduced.

An inflation-corrected structural deficit represents the change in the value of federal debt, measured at cyclically adjusted GNP. This measure can be calculated by reducing the structural deficit by the rate of inflation multiplied by the privately held stock of federal debt. For example, with a 5 percent rate of inflation, the capital loss on a $700 billion stock of privately held federal debt would be $35 billion (0.05 times $700 billion). This capital loss would transform a $100 billion structural deficit into a $65 billion inflation-corrected structural deficit.

11/ The constant-dollar market value of federal debt is affected by both inflation and changes in interest rates. These interest-rate effects, however, are not considered in this discussion. See Robert Eisner and Paul J. Pieper, "A New View of the Federal Debt and Budget Deficits," American Economic Review (forthcoming).

Figure B-3.

Actual and Inflation-Adjusted Measures of Structural Deficits



SOURCE: Congressional Budget Office.

[a] Inflation-adjusted structural deficit is defined as the structural deficit minus the decline in value of publicly held federal debt due to inflation.

An alternative measure of the inflation-corrected structural deficit adjusts not for the entire capital loss to owners of federal debt but only for some measure of the anticipated capital loss. If inflation is anticipated, an inflation premium is added to the nominal interest rate and is reflected in higher interest payments on the federal debt. This inflation premium simply compensates bondholders for the erosion in the value of federal securities due to inflation. Bondholders may spend very little of this portion of their interest income, for otherwise they would gradually consume their wealth. How much or how rapidly bondholders increase their saving in response to unanticipated inflation is very difficult to determine.

Figure B-3 compares the standardized-employment deficit with the same measure adjusted for total inflation, 12/ both expressed as percentages of potential GNP. 13/ It shows a significant difference between the two.

12/ In these calculations, the rate of inflation is measured by the percent change in the GNP deflator.

13/ The middle-expansion deficit also could be adjusted for the effects of inflation on the constant-dollar stock of federal debt.

During the 1970s, the inflation correction turns the standardized-employment deficit negative, that is, the deficit becomes a surplus that averages 0.1 percent of benchmark GNP. In contrast, the unadjusted measure is a deficit averaging 1.2 percent of benchmark GNP. During the 1980s, these measures are projected to register deficits of 1.4 percent and 3.0 percent, respectively.

THE PRIMARY STRUCTURAL DEFICIT

Historical experience shows that rising (falling) trends in federal debt relative to GNP have been accompanied by approximately offsetting changes in nonfederal debt as a percentage of GNP. Similarly, growth trends in the federal debt-GNP ratio appear to have been accompanied by opposite trends in the private capital-output ratio. These observations suggest that, in analyzing the impact of structural deficits on capital formation, the issue is not whether the structural deficit is increasing or decreasing but whether its size persistently raises federal debt relative to nominal GNP. The outcome depends on several factors, including the pace of economic growth, the level of interest rates, and the amount of cyclically adjusted federal borrowing in excess of interest costs--the primary structural deficit.

To avoid an increase in the actual federal debt-GNP ratio, it is not necessary to balance the budget but rather to limit federal borrowing to the growth rate of GNP times the federal debt. If federal interest payments are rising relative to GNP, then the ratio of other spending to GNP must fall, or the ratio of taxes to GNP must rise to keep the federal debt-GNP ratio from rising. In other words, federal borrowing in excess of interest costs--the primary deficit--must be reduced relative to GNP.

Under the hypothetical conditions of unchanging GNP growth, constant interest rates, and a fixed primary deficit-GNP ratio, a long-run federal debt-GNP ratio can be computed to determine if the size of the primary deficit would raise or lower federal debt relative to GNP. This long run ratio is calculated by dividing the primary deficit (expressed as a percentage of GNP) by the difference between the growth rate of GNP and the effective interest rate on federal debt. 14/ So long as the growth rate of GNP exceeds the effective interest rate, the actual federal debt-GNP ratio would move toward the long-run ratio. Whenever these two ratios coincide,

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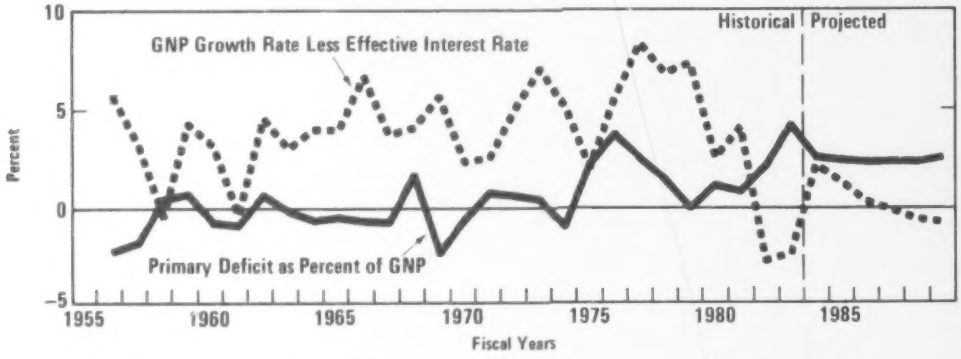
14/ The derivations are discussed in James Tobin, "Budget Deficits, Federal Debt, and Inflation in Short and Long Runs," Toward A Reconstruction of Federal Budgeting (The Conference Board, 1982), pp. 51-59.

Figure B-4.

Determinants of Debt Accumulation



SOURCE: Congressional Budget Office.

federal debt, interest payments, non-interest outlays, and revenues all remain constant relative to GNP, under the assumptions outlined above. 15/

On average, during 1956-1974, there was a primary surplus, and the long-run federal debt-GNP ratio was below the actual ratio. Consequently, the federal debt declined steadily from 59.4 percent to 25.1 percent of GNP (see Table B-2). During 1975-1981, however, large primary deficits, higher interest rates, and slower GNP growth (see Figure B-4) raised the average long-run federal debt-GNP ratio to 32.1 percent. The actual ratio responded partially by rising to 27.6 percent. In the 1980s, the situation becomes explosive. The effective interest rate in 1982-1983 was higher than the growth rate of GNP, and this situation is projected to recur in 1987-1989. Under these conditions, the federal debt-GNP ratio would continue to rise without limit, unless the large primary deficits were turned into large primary surpluses.

15/ This analysis assumes that the size of the primary deficit does not affect GNP growth or interest rates in the long run. However, if a large primary deficit lowers GNP growth or raises interest rates, it increases the chance of a debt explosion--a never-ending increase in debt and interest payments relative to GNP. Such a situation is termed "unstable," and results when the growth rate of GNP remains lower than the effective interest rate on federal debt. A primary surplus would be needed to stop this explosion, that is, federal borrowing would need to be less than interest costs.

TABLE B-2. DYNAMICS OF THE FEDERAL DEBT-GNP RATIO

	1956-1974	1975-1981	1982-1989
Federal Debt as Percent of GNP, Beginning and End of Period a/	59.4 to 25.1	25.1 to 27.6	27.6 to 49.4
Hypothetical Long-Run Federal Debt-Ratio b/	-10.3 e/	32.1	Unlimited
Primary Deficit (+) or Surplus (-), Percent of GNP c/	-0.4	1.7	2.6
GNP Growth Rate Minus Effective Interest Rate d/	3.9	5.3	-0.3

a/ Debt held by Federal Reserve and by nonfederal owners, par value, at end of fiscal year, relative to nominal GNP for fiscal year, from fiscal year preceding the period to last fiscal year of period.

b/ Line 3 divided by line 4.

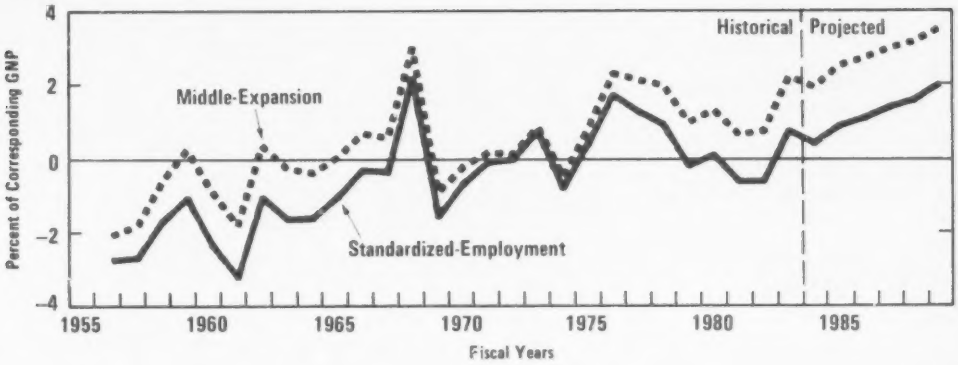
c/ The primary deficit was calculated as the fiscal year-to-year change in publicly held federal debt minus net interest payments plus Federal Reserve payments to the Treasury.

d/ The GNP growth rate was calculated on a fiscal year-over-year basis. The effective interest rate was calculated as the ratio of (1) net interest payments minus Federal Reserve payments to the Treasury and (2) debt held by the Federal Reserve and by nonfederal owners at the end of the previous fiscal year. Other measures of the effective interest rate could produce different results, but the general conclusions would not be changed.

e/ A negative figure means that the hypothetical long-run debt-GNP ratio is negative, that is, the government would be a net lender to the private sector, rather than a borrower from it.

Figure B-5.

Primary Structural Deficits



SOURCE: Congressional Budget Office.

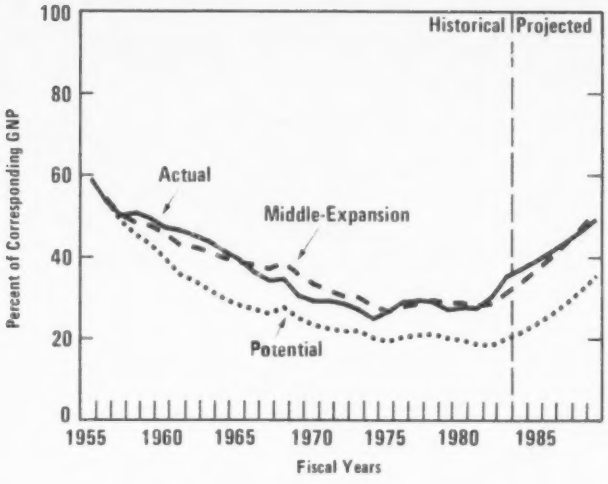
NOTE: Middle-expansion denotes the middle expansion deficit as a percent of middle-expansion GNP. Standardized-employment denotes the standardized-employment deficit as a percent of standardized-employment GNP.

The calculations in Table B-2 understate the contribution of fiscal policy to the long-run growth of the federal debt-GNP ratio, because the growth of the primary deficit is reduced by a large decline in the cyclical component of the deficit. A better gauge is the primary structural deficit, that is, the noncyclical component of the primary deficit. In contrast to no rise in the primary deficit, the primary standardized-employment deficit rises from 0.4 percent to 2.0 percent of potential GNP in the forecast period, while the primary middle-expansion deficit grows from 2.0 percent to 3.6 percent of middle-expansion GNP (see Figure B-5). These large increases indicate that current budget policies are significantly raising the long-run ratio of federal debt relative to GNP. The large differences in the levels of these two structural measures, however, raises the question which structural measure is more appropriate for assessing the impact of fiscal policy on the long-run federal debt-GNP ratio.

The Cyclically Adjusted Federal Debt. As in the case of deficits, cyclical changes can distort the nature and implications of debt as a measure of fiscal policy. For the purpose of analyzing the long-run impact of fiscal policy on the stock of private capital, the noncyclical component of federal debt is more relevant than the actual debt. Figure B-6 shows how two measures of noncyclical federal debt compare with actual federal debt. The structural measure based on potential GNP is substantially lower than

Figure B-6.

Actual and Cyclically Adjusted Measures of Federal Debt



SOURCE: Congressional Budget Office.

NOTES: Middle-expansion denotes the middle-expansion debt as a percent of middle-expansion GNP. Actual denotes the actual debt as a percent of actual GNP. Potential denotes the potential debt as a percent of potential GNP.

the actual debt. This occurs because the gap between actual and potential GNP cumulates over time. This large difference suggests that potential GNP is not an appropriate benchmark for cyclically adjusting the federal debt. In contrast, the cyclically adjusted debt based on the middle-expansion GNP trend shows cyclical, but not enduring, departures from actual federal debt. For this reason, it is the better measure of cyclically-adjusted federal debt.

How small must the primary structural deficit be to reduce the cyclically adjusted federal debt relative to trend GNP? The answer depends on the difference between the trend growth rate of GNP and the interest rate on federal debt. Table B-3 illustrates that when GNP growth is four percentage points above the interest rates--roughly the average for 1960-1979--the primary structural deficit would have to be less than 2 percent of cyclically adjusted GNP. If the GNP growth rate was only two percentage points above the interest rate, the primary structural deficit would have to be less than 1 percent of cyclically adjusted GNP. Finally, if the growth rate was equal to the interest rate, a primary surplus would be needed.

RECAPITULATION

This appendix has presented alternative measures of structural deficits designed to address different policy issues. The standardized-employment and middle-expansion deficits separate the budget effects of the business

TABLE B-3 ILLUSTRATIVE LONG-RUN ESTIMATES OF THE CYCLICALLY ADJUSTED FEDERAL DEBT-GNP RATIO
(In percent)

Primary Structural Deficit a/	Federal Debt-GNP Ratio b/				
	1990	2000	2010	2020	Long Run
GNP Growth Rate Minus Interest Rate Equals 4 Percent					
3	50	58	64	67	75
2	50	50	50	50	50
1	50	42	36	33	25
0	50	34	22	15	0
GNP Growth Rate Minus Interest Rate Equals 2 Percent					
3	50	68	83	95	150
2	50	59	66	73	100
1	50	50	50	50	50
0	50	41	34	27	0
GNP Growth Rate Minus Interest Rate Equals Zero					
3	50	80	110	140	Unlimited
2	50	70	90	110	Unlimited
1	50	60	70	80	Unlimited
0	50	50	50	50	50

a/ As a percent of cyclically adjusted GNP.

b/ On a cyclically adjusted basis.

cycle from the budget effects of tax and spending policies. The inflation-corrected structural deficit is useful to the extent that inflation-related capital losses on outstanding federal debt stimulate private savings and thus help to reduce the crowding-out effect of federal borrowing. Finally, the primary structural deficit introduces the idea that the growth of federal debt relative to GNP, both measured on a cyclically adjusted basis, may be preferable as a measure for analyzing the long-run crowding-out effects of fiscal policy.

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